Aligning logics in a European military helicopter programme?

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Aligning Logics in a European Military Helicopter Programme?

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CHAPTER 1 INTRODUCTION

"In the pragmatics of cooperation, the questions that participants articulate over and over emphasize the "how" of the process; these are questions that seek solutions: How can we achieve cooperation in this context of a wide-ranging heterogeneity of interests? How do we get all these differences (of people, institutions, nationalities, disciplines, components) to work together? How do we tame/ unleash diversity in the interests of mutual production?" (Zabusky, 1995: 196)

1.1 European Cooperation in the Defence Industry

The international development and production of weapons systems in Europe has become an established practice during the last decades. Initially, international programs were often launched in the pursuit of security and foreign policies. Later, economic incentives became a driving force, as governments recognised that national development trajectories increasingly became unviable because of the increasing costs of development and production of complex weapons systems. The economic incentives became more important with the end of the Cold War, when many nations witnessed a decline in defence spending. A military motive for more international cooperation emerged after the military operations in former Yugoslavia, Iraq and Afghanistan. Allied forces experienced difficulties in carrying out joint operations, because their systems often proved incapable of communicating and connecting properly with systems of other armed forces (e.g. Soeters and Manigart, 2008). Hence, the need for international programmes to develop and produce weapon systems gradually increased.

But many of these international programmes have suffered significant delays, cost escalation, requirements downgrading, or outright cancellation (Cobble, 2004; James 2002; Lorell, 1980; Moravscik, 1993). Technical constraints certainly have impacted the outcomes of development and production programmes. Military requirements are often set ambitiously. Weapons systems are designed to be able to operate under unusual conditions. Taking the total development and production time (which may take several years if not

decades) into account, military planners have to look many years ahead to ensure that new equipment has not already become obsolete the moment it is entering service in the armed forces (Lorell, 1980).

Besides technical constraints, political and economic interests have a strong impact on the management and outcomes of programmes. In his case study on the development of the French-German Transall C-160 transport aircraft, one of the earliest examples of European collaboration on the development of military aircraft, RAND researcher Mark Lorell (1980) illustrates the political tensions and conflicts inherent to many European weapons systems development and production programs. He noted how political and industrial considerations plagued the programme, which technologically should have presented few problems. The aircraft closely resembled the Hercules. The difficulties that engineers encountered seemed to have only marginally affected time schedule and costs.

Yet, for the French government collaboration with Germany served a larger political end. It was a means to gain political influence in Germany. Lorell (1980: 47) notes that, "*[t]he political value of the Transall program far outweighed its utility as an efficient and effective acquisition strategy. Its importance as a symbol of Franco-German solidarity and as a challenge to U.S. aerospace and technological ascendency in Europe ultimately justified its continuation.* European countries concerned with efficient procurement, better military performance and closer transatlantic relationships chose the Hercules (Lorell, 1980). But French diplomacy in combination with the Transall programme was able to block a European NATO Hercules licensed programme in both 1959 and 1963. As a result, European armed forces operate two different aircraft with similar functions.

Armaments programs have often been plagued by political instabilities as actors' interests diverge, political commitments change over the course of a program, and institutional complexities become salient. These difficulties almost seem inherent in these types of programmes. The development and production of advanced aircraft generally covers long periods of time. The total life cycle of the Lynx helicopter covers roughly half a century, beginning in the mid 1960s as a development program by the British and French governments and ending approximately around 2015 when the last Lynx helicopters will be taken out of active service in the majority of the countries in which the helicopter is used. Often requirements change during the course of a program, when new governments come

into office, economic and budgetary conditions change, and some security threats disappear, while others become more pending, or completely new ones emerge.

Some of these issues also occur in the problems that have plagued the European Galileo Satellite system. The European Galileo system is being developed as an alternative to the U.S. Global Positioning System (GPS) and the Russian GLONASS system. The Galileo system is meant for commercial applications but it could easily be used for military purposes. It is designed to be more accurate than the U.S. GPS system – although the U.S. is currently updating its GPS system. Not only would Galileo give a boost to Europe's space technological capabilities, it would also lessen its dependence on the GPS system, which could – at least theoretically – be shut down by the Pentagon (Economist, May 10th 2007).

The Galileo program was initially set up as a public private partnership. In 2002, the European Commission and the European Space Agency agreed to fund € 1.1 billion of the estimated € 3 billion total program costs. The remaining € 1.9 billion was planned to come from the private consortium and the private investors. The private consortium that eventually became responsible for the Galileo program emerged out of the merger of two competing bidding teams – a political compromise to not offend the loosing companies. The private consortium include eight major European aerospace groups: Franco-German EADS, France's Thales and Alcatel-Lucent, the UK's Inmarsat, Italy's Finmeccanica, Spain's AENA and Hispasat and the German consortium TeleOp, led by Deutsche Telekom (Economist, May 27th 2007).

On December 28th 2005, the Giove A, the first of in total 30 satellites, was successfully launched and placed in orbit. Not much later the Galileo program ran into serious difficulties. Disagreements over the funding and governance crippled the program to such an extent that for months almost no work could be conducted. To get out of the impasse, the public private partnership construction was abandoned and the European Parliament and the European Council have assumed overall political and program responsibility. For the oversight a special commission was set up, the European Global Navigation Satellite System Program Committee. The European Space Agency (ESA) has been awarded prime contractor responsibility for the Galileo program (Aviation Week and Space Technology, 2007).

These examples clearly illustrate the tensions that often emerge during the course of

an international development program. However, these difficulties do not only emerge in international collaborative programmes. Many nationally managed programmes also suffer from cost overruns, delays, and requirements that eventually cannot be met. But, a 1999 McKinsey & Company report does reveal that cost overruns and delays do occur more often in multinational programmes. This review of 75 major European defence programmes showed that cost overruns were 30 per cent higher on multinational programmes than on similar national programmes. In-service dates of multi-national programmes slipped by on average by 40 per cent, compared to a slippage of 10 per cent on nationally managed programmes (Keohane, 2002: 21)

Note also that often these general indicators for effective and efficient programme management are not the primary concerns for governments when entering collaborative programmes. Some of the early post World War II programmes – like the Transall C160 programme mentioned previously – were grounded in different logics. It is no secret that the early French-German collaborative programmes were a means for the French government to exert control over German post-war rearmament, whereas for Germany it was an instrument to rebuild its industrial technological capabilities (Uiterwijk and Kappert, 2010).

Despite their economic and political impact, organisational theorists have rarely studied these programmes. An exception is the study of Dussauge and Garrette (1995) on the control and performance of international joint ventures in the global aerospace and defence industry. However, they only covered the joint ventures between commercial partners. Economists tend to look at the market conditions for explaining programme performance (e.g. Hartley, 2008), but tend to leave the origins and nature of conflicts of interests out of the scope of their analyses. Political scientists, on the other hand have developed better descriptions and explanations of the defence industrial policies of nations, but mostly ignore their implications for individual programme management (e.g. Chin 2004; Reppy, 2000). In this thesis we attempt to gain a deeper understanding of the origins, consequences and resolution of conflicts of interests among the core partners in an international military helicopter development and production programme.

1.2 The Multinational NH 90 Programme

The empirical setting of the case study central in this study is the NATO Helicopter for the 1990s (to be abbreviated as NH 90). In the late 1970s the aerospace industry was facing a downturn and many aerospace companies were in need of new orders. At the same time, European governments had become concerned with the overcapacity that existed in the industry and were looking greater industrial consolidation. This was accelerated by a dissatisfaction of European governments and aerospace and defence companies with the protectionist defence market policies of the United States.

This dissatisfaction had emerged despite frequent talk of opening up a "two-way street" (Lovering, 2001) for defence procurement not only allowing American equipment to be bought by European governments, but also allowing European developed and produced equipment to be bought by the United States. Thus far, the "Buy American" Act from 1933 had prevented a more balanced approach in transatlantic procurement relations: European governments purchasing American equipment had become the standard practice after the Second World War.

By the 1970s, many European governments realised that this situation was not going to change anytime soon. In 1976, the Independent European Programme Group was established allowing European governments to seek closer cooperation in defence equipment matters among themselves. A number of European development and production programmes were launched shortly thereafter. Italy and the United Kingdom started a development and production programme for the 15-ton EH 101 helicopter. France and Germany were setting up the PAH 2 Tigre attack helicopter programme. Italy, the Netherlands, Spain and the United Kingdom were planning to launch a development programme for an upgrade of the A129 Mangusta attack helicopter produced by Agusta from Italy. And France, Germany, Italy, the Netherlands and the United Kingdom were discussing a joint programme for the 9-ton NH 90 helicopter. Originally, the intention emerged to combine these different programmes into one, producing a family of helicopters. This was seen as a first step towards rationalisation of the European helicopter industry and to reduce the costs of development and production.

Yet, a number of subsequent events would inhibit the materialisation of the original

intention to achieve greater rationalisation. France and Germany discovered that they did not share a requirement for the EH 101. Moreover, France and Germany decided to jointly develop and produce the PAH 2 Tigre attack helicopter without the other partners. In the United Kingdom, the main helicopter manufacturer Westland decided to team up with United Technology Corporation's Sikorsky to produce under licence and sell the American UH-60 Black Hawk. In 1986, this even led to a political scandal in the United Kingdom known as the "Westland Affair", culminating in the resignation of State Secretary of Defence Heseltine (Freedman, 1987).

Italy and the United Kingdom bilaterally continued the EH 101 programme. France and Germany continued their bilateral PAH 2 Tigre attack helicopter programme. The multilateral programme for the upgrade of the Agusta AW 129 Mangusta collapsed in 1990 when both the Netherlands and the United Kingdom decided to procure the American AH 64 Apache attack helicopter. Only the NH 90 survived as a multilateral cooperative effort, even though the United Kingdom abandoned the programme in 1987 after the "Westland affair". In 1991, the governments of France, Germany, Italy and the Netherlands signed the General Memorandum of Understanding governing the development and production of the NH 90.

The programme involves France, Germany, Italy, and The Netherlands as the founding nations. In 2001, Portugal also became a member of the NH 90 programme, followed by Belgium in 2004. These nations form the NATO Helicopter Management Organisation (NAHEMO). The daily management became delegated to the NATO Helicopter Management Agency (NAHEMA). The industrial partners responsible for the design, development, and production of the NH 90, were drawn from the participating nations and involve Eurocopter France, Eurocopter Germany, AgustaWestland (Italy) and StorkFokker Aerospace (The Netherlands). These four industrial partners have organised themselves in NHIndustries (NHI). NHI serves as the contract partner for the respective industrial partners. The NH 90 programme would become the largest European helicopter programme ever launched. Nonetheless, the programme has not been without its controversies. The original in-service date of mid 1990s slipped by almost a decade. In May 2004, the first NH 90 built in series production, was presented to the public at the ILA Air show in Berlin (StorkFokker, 2004). And at times the programme even came close to outright cancellation. In 2011, more

than 10 years after the original in-service date, the full-scale delivery of the NH 90 aircraft has really started.

1.3 Research Questions

Managing these types of networks involves a process of almost continuing negotiation, commitment and action among the partners (Ring and Van de Ven, 1994). Put differently, actors need to continually align their expectations, interests, norms and values. It is this alignment that forms the primary motivation for our study. Conceptually, we will draw on neo-institutional theory in organisational sociology.

Neo-institutional theory stresses the importance of paying attention to the context, i.e. the social, economic, legal and historical reality, in which organising takes place. It is therefore sceptical towards universal rational-actor models of individuals and organisations. But when exaggerated, it has a seamy side too: neo-institutionalism has been criticised for having an over socialised conception of human action (DiMaggio and Powell, 1991: 1-15).

In addressing this criticism, a number of possible research directions have been suggested to incorporate agency and interests more fully. Oliver (1991) developed a typology of strategic responses to institutional pressures available to organisations by injecting resource dependence (Pfeffer and Salancik, 1978) arguments into neo-institutional theory. DiMaggio (1988) emphasised the role of institutional entrepreneurs, powerful actors who are capable of introducing new ideas and practices and mobilizing sufficient support to sustain them.

Additionally, Friedland and Alford (1991: 248-249) proposed the notion of institutional logics defining them as "*sets of material practices and symbolic constructions*" that constitute an institutional order's "*organizing principles*" and which are "*available for individuals and organizations to elaborate…* They are "*symbolically grounded, organizationally structured, politically defended and technically and materially constrained".* They have taken the notion of logics of action (Karpik, 1977) to the institutional level, suggesting that societal sectors in western nations have a central institutional logic, specifying not only what ends can legitimately be pursued but also the means for achieving them (Friedland and Alford, 1991). These institutional logics provide a base from which

individuals and organisations derive their identities and interests (Friedland and Alford, 1991).

Much previous research on institutional logics has been conducted at the level of the societal sector or the organisational field. The idea of nationally based institutional logics in the defence industry we will propose here requires some elaboration. Indeed, neo-institutional theorists have stressed the contradictions and interdependencies between societal sectors as providing both the means for institutional stability as well as change (Clemens and Cook, 1999; Friedland and Alford, 1991). But here we would argue lies the basis for the existence of national institutional logics since the degree of contradiction and interdependency is likely to vary between different societies. By this we do not intend to confuse societies with states, nor are we inclined to suggest that all institutional logics have a national character. Yet, the key role of the nation-state, as one of the major institutional sectors, cannot be denied in many social spheres. The role of the state as the central arena for the development and perpetuation of key institutions such as laws and regulations, property rights and the organisation of labour and capital is precisely the reason that many central institutional logics that transcend national boundaries produce localised national variations (Whitley, 2007).

In some societal areas, particularly those that pertain closely to a nation's '*raison d'être*', the national character is more strongly present. Financial economic and defence policy making fall readily within that category. Issues of finance and defence have basically dominated the development of states. Even the most liberal of all individuals would like to retain state's prerogative in these matters. Empirical evidence is abound. In the Euro-crises that has persisted through out 2010 the dominant actors are central governments. This remains also true for defence policy matters. Although international forums such as the United Nations and NATO play an important role, ultimately national governments have the final voice.

The protection of a state's sovereignty and borders against outside threats has led to the situation that many states have developed armed forces that needed to be supplied with equipment (Mullins, 1987). This in turn has had the effect that many nation-states have seen the emergence of their own national defence industries. Indeed, highly sophisticated weaponry such as aircraft carriers, aircraft and tanks have often more symbolic content than

the aversion of foreign threat. They are often considered to be symbols of a nation's prowess and grandeur (Suchman and Eyre, 1992). Henceforth, defence industries have played an important role in the technological and economic development of many nations, although its influence has been waning since the 1980s (Nelson, 1993; Reppy, 2000). Yet, its key strategic importance for many nations is still reflected in the exemption of defence and other strategic products from the operation of the rules of internal market of the European Union.

Capitalising upon the foregoing we suggest that nations are likely to possess distinctly national institutional logics in defence industries matters. Our first research aim involves identifying the different logics of the NH 90 stakeholders. Thus, we ask the following question:

1. What were (and are) the national logics of actions of the actors (i.e. national governments and industrial companies) in the NH 90 programme?

After we have identified the different institutional logics of the national stakeholders in the NH 90 programme, we are interested in how they tried to align their logics. Bacharach, Bamberger and Sonnenstuhl (1996) argued that parties involved in an exchange relationship need at least some minimal degree of alignment in their logics for an exchange to occur. Put differently, the logics of parties in an exchange relationship need to show some consistency in the means-ends relationships of the actors involved. The process through which the actors in the NH 90 programme established this consistency is the second aim with which we are concerned in this research. This leads us to our second research question,

2. How did the process of aligning the logics of action of the various national stakeholders unfold?

In the following paragraphs, we will detail our theoretical rationale and our intended contributions to the literature.

1.4 Theoretical Motivation

Institutional sociologists are attentive to the role of cognitive models as a means for individuals and organisations to reduce environmental uncertainty, and to make collective action both possible and meaningful (Hargrave and Ven de Ven, 2006; Scott, 2001; Thornton, 2004; Zucker, 1977). Increasingly, scholars have invoked the concept of logics of action as a mediator between environmental stimuli and individual mental structures (DiMaggio, 1997; Karpik, 1977; Thorton; 2002). Logics specify not only the means and ends that are considered to be legitimate, but also which actors have the authority to enable and constrain the possibilities of others (Lounsbury, 2002: 255).

While political contestation is widely acknowledged to be at the heart of competition between logics of action, few studies have addressed these empirically (DiMaggio, 1988; Lawrence, 2008). In this connection Washington (2008: 264) argued: "*Using time periods to demarcate shifts in institutional logics is the convention in research on institutional logics, but this convention also makes a very messy process appear linear and clean… However, empirically, logics are probably more 'messy' and are hybrids or combinations of different logics. Presenting institutional logics as distinct, separate, operating logics is also symptomatic of the research in this field. Much of the writing on institutional logics portray this 'one logic at a time' idea of institutional logics and gives the impression that logics replace each other due to an exogenous shock in a fairly orderly process. However, I wonder if this is true."*

Scholars have repeatedly urged the need for research on the micro-dynamics of institutional change and stability (e.g. Bacharach, Bamberger and Sonnenstuhl, 1996, 2000; Rodrigues, 2006; Powell and Colyvas, 2008; Thornton and Ocasio, 2008). They claim that environments and organisations consist of multiple potentially competing logics (Lounsbury, 2007; Thorton 2002). Powell and Colyvas remarked that "*rather than perspectives that either highlight habitual replication or savvy change agents, we stress that most micro-motives are fairly mundane, aimed at interpretation, alignment, and muddling through. And, as individuals and groups engage in such actions and resist others' attempts as well, they may well transform logics and alter identities"* (2008: 277).

To gain a deeper understanding of alignment processes, we will take Weick's sense-making perspective. Despite a common concern with the social construction of reality, neo-institutional theory and the literature on sense-making (Weick, 1969; 1995) have developed relatively independent from one another. Where neo-institutional theory has been criticised for its emphasis on structure over agency, the sense-making perspective has often been criticised for the opposite (Weber and Glynn, 2006; Weick, Sutcliffe and Obstfeld, 2005). We will use the sense-making perspective to inform our analyses of how logics in the NH 90 programme have become aligned, if only limitedly so.

International public-private networks provide fertile ground for institutional tensions as a consequence of conflicting or competing institutional logics. First, the different societal sectors (public versus private) to which the actors belong are governed by alternative institutional logics (Friedland and Alford, 1991; Thorton, 2004). Bryson, Crosby and Stone (2006) have argued that different institutional logics of the actors involved have detrimental effects on the degree to which actors in cross-sector collaborations are able to agree on the design, conduct and outcomes of cross sector collaborations. They assert that in cross-sector collaborations "*logics compete because actions, processes, norms and structures that are seen as legitimate from the vantage point of one institutional logic may be seen as less legitimate or even illegitimate from the perspective of another logic*" (Bryson, Crosby and Stone, 2006: 50).

Second, we have argued that the background of the actors (i.e. the nations and private defence companies) provides them with different nationally coloured institutional logics. Although neo-institutional theory in organisational sociology has for long tended to remain rather silent on issues of nationality (see for a notable exception Luo (2007)), asserting that nations may have different logics is certainly not inconsistent with the theory's central tenets. Many theorists in the adjacent fields of institutional economics and institutional political science have described the wide-ranging institutional frameworks of modern capitalist nations (Quack and Morgan, 2000; Hall and Soskice 2001; Whitley 1994). While the majority of these studies take a comparative approach, focusing on the differences between nations with respect to the role of institutions in the organisation of the economy, some studies focus on how the institutional features of these economies influence the interests and respective policy positions of governments in international negotiations (e.g. Fioretos,

2001; Bremberg and Britz, 2009).

Similarly, international management scholars have noted considerable variation in national cultural values and norms, leading to important insights with regard to intercultural business encounters (e.g. Hofstede, 2001; Morris, Podolny and Sullivan, 2008; Smith, Dugan and Trompenaars, 1996; Smith, Peterson and Schwartz, 2002). This has produced a flourishing tradition in the field of cross-cultural management that is highly relevant for international institutional analysis.

However, with respect to the relation between culture and institutions some ambiguity seems to exist. We would like to note that the division of labour between the social science disciplines is primarily on the emphasis placed on different dimensions (regulative, normative or cultural-cognitive) of institutions (Scott, 2001). Without going into a detailed discussion on the relation between institutions and culture as found in the literature – for many of the definitions of these concepts have considerable overlap – it appears that cultural researchers tend to focus on the 'softer' side of culture, the norms and values held by members of a cultural group. Institutional scholars on the other hand often emphasize the 'harder' side of culture, such as the laws, rules and policy arrangements that apply to members of a group. Cultural and institutional approaches complement each other more than they contradict. To illustrate, most people marry out of love for their partners, pursuing ingrained cultural values of life, as they commit themselves more deeply into their relationship. Yet, the institution of marriage also comes with a strong legal status and an elaborate set of rules.

In sum, international public private programmes provide contexts conditioned by "*structural overlap*" (Thornton and Ocasio, 2008). Structural overlap occurs when "*individual roles and organizational structures that were previously distinct are forced into association"* (Thornton and Ocasio, 2008: 116), potentially generating contradictions and conflict. "*In these social locations, authority structures may be attenuated, roles, and boundaries are often blurred or ambiguous, and participants are exposed to multiple models or logics, creating opportunities and resources for actors to experiment with new, multiple, or hybrid forms"* (Schneiberg and Clemens, 2006: 218-219).

In this study, we use an in-depth qualitative case study on the development and production of the NATO Helicopter for the 1990s (NH 90). We examine how differences in

institutional logics have affected the cooperation between the different partners in the programme and how actors have tried to reconcile potentially conflicting institutional logics.

1.5 Contribution

With this study we believe to make a contribution to the general academic literature. First, instead of focussing on the level of the organisational field, which has been for some time the preferred level of analysis for neo-institutional scholars, we focus on an interorganisational network. Many field level studies have emphasised how organisational fields – such as health care - undergo institutional change when an institutional logic dominating a particular historical period is replaced by a new dominant institutional logic (e.g. Reay and Hinings, 2005; Scott, Ruef, Mendell and Caronna, 2000; Thorton, 2004).

We will adopt a *micro-institutional* approach (cf. Johnson, Smith and Codling, 2000; Wicks, 2001), to see in what manner competing institutional logics influence cooperation among actors in an international interorganisational network. Focusing on a lower aggregate than societal sectors and organisational fields allows for a closer examination of the micro-institutional processes to which organisations and individuals are subjected, but to which they also contribute; and which they in turn, in their capacity as social actors, may potentially harm, both intentionally and unintentionally. In this sense, our study is based on a multi-level approach that tries to disentangle the relations between the macro-institutional environment and the enactment of that environment in the practices of organisations and the individuals comprising them. In this respect, we honour calls in the literature that emphasise the need to span levels (e.g. Johnson, Melin and Whittington, 2003).

Moreover, we aim to provide a stronger connection of the sense-making perspective and neo-institutional theory. Calls in the literature have stressed the need for a deeper integration of these streams of research. (Weber and Glynn, 2004). Nevertheless, empirical research has remained scarce. We believe that alignment could provide a useful concept to bridge these different perspectives.

Additionally, our study aims to contribute to the literature on neo-institutional theory by focusing on institutional logics in an *international* context. Most work in neo-institutional

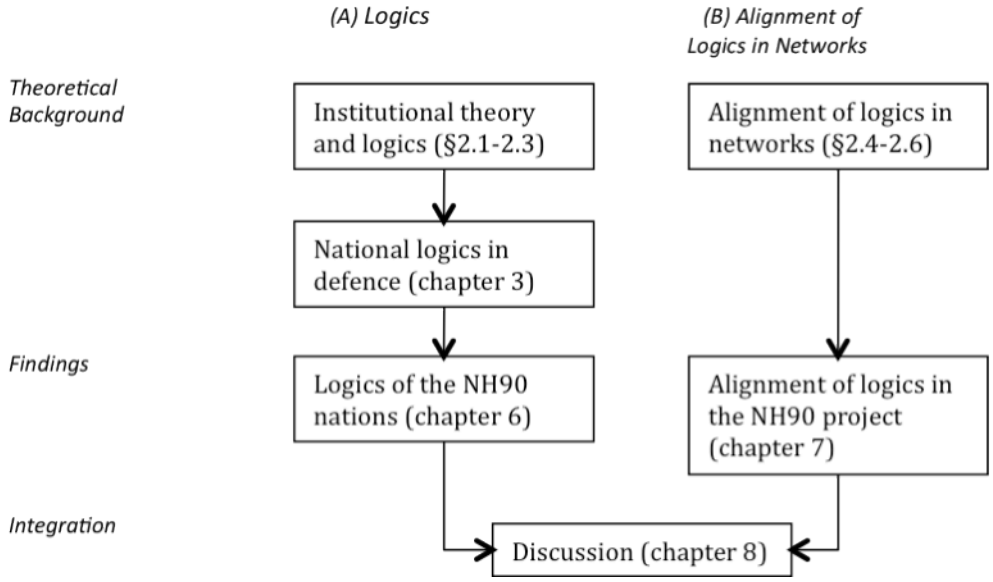
theory has focused on organisational fields, generally in a national context. Only recently have neo-institutional scholars started to conduct research in international settings, for example the adoption of an organisational practice by subsidiaries of a multinational corporation (Kostova and Roth, 2002), the influence of national institutional logics on employee training (Luo, 2007) and on business group restructuring in emerging economies (Chung and Luo, 2008), and "*institutional exceptions*" in global projects (Orr and Scott, 2008). Unlike neo-institutionalists, international management scholars have spent considerable effort in examining the nature, persistence and consequences of natural cultural traits (e.g., Hofstede, 2001; D'Iribarne 1998, House et al., 2008). We will use this literature for a better understanding of the values and beliefs of the governments and industrial actors of the NH 90 nations.

1.6 Structure of the Book

In chapter two we will elaborate on our theoretical background. We will discuss the origins and development of institutional theory in general. Following, we will discuss the concept of logics of action, a central concept in the context of this study. Finally, we will elaborate on how sense-making processes may facilitate the alignment of logics when actors are exposed to potentially conflicting logics of action. In chapter three we examine the main cultural, political and business traits of the four nations involved in this study, including their industrial defence policies that have developed over the last decades. Chapter 4 is dedicated to a description of our research design and methods. In chapter five, we will describe the NH 90 programme based on the analysis and documentary material collected for this study. This is a precise historical reconstruction of what has happened in the programme. Then follows our analysis of the interviews we conducted with 35 key-persons that are or have been active at the political, administrative and industrial sides of the four participating nations. In chapter six, we will present the analysis of our interview findings revolving around the institutional logics of the nations examined. Chapter seven contains the interview findings concerning the attempts to align the various logics at stake. In the concluding chapter eight we will critically discuss the process of alignment in this study, highlight our contributions for theory, present avenues for future research, and reflect on the practical implications of our

findings. Figure 1.1 contains a schematic overview of the book's structure and the relations between the different chapters and paragraphs.

Figure 1.1 Schematic overview of the book



CHAPTER 2 THEORETICAL BACKGROUND

2.1 Origins of (Neo-) Institutional Theory

Interest in the creation, maintenance, and effects of institutions has a long tradition in the social sciences. Hodgson (2006) traced the concept back to Giambatitsta Vico's Scienza Nuova of 1725. This interest is also seen in the emergence of different schools of thought in the related fields of economics, political science, sociology, and philosophy. Each of these disciplines has a subfield whose proponents call themselves institutionalists. Each of these subfields also has a branch of scholars who call themselves neo-institutionalists. The common trait of neo-institutionalists is the rejection of the rational actor model characteristic of most mainstream economics, although some analysts use rational choice models to explain the emergence of institutions. In general, institutions are defined as the "*humanly devised schemas, norms, and regulations that enable and constrain the behavior of social actors and make social life predictable and meaningful*" (Hargrave and Van de Ven, 2006: 866).

This definition is purposively broad. It points to a number of dimensions of institutions. These dimensions also reflect a general division of labour among institutionalists across social science disciplines. Schemas refer to the cultural-cognitive dimension of institutions (e.g. Scott, 2001). DiMaggio defined schemata as "*knowledge structures that represent objects and events and provide default assumptions about their characteristics, relationships, and entailments under conditions of incomplete information*" (DiMaggio, 1997: 269). They are cultural in the sense that they are grounded in external symbolic frameworks through which social reality is referenced and rationalized and they are cognitive in the sense that "*social reality is interpreted and constructed through internalized frames of meaning making*" (Orr and Scott, 2008: 566).

Behaviour is seen as the outcome of the interaction among external rituals and stimuli, and internal mental representations (DiMaggio, 1997: 277). This is the dimension of institutions that organisational sociologists tend to focus on. Norms, values, codes of conduct, traditions, habits and customs reflect the normative dimensions of institutions.

Values specify what is preferred and norms how things should be done (Scott, 2001). Political scientists have tended to focus upon this dimension of institutions. Rules and regulations, as for example found in the Law, constitute the final dimension of institutions. This is the dimension most frequently addressed by economists. What are at stake here are explicit regulatory processes involving rule setting, monitoring and sanctioning.

In an effort to integrate the different perspectives on institutions, Scott (2001: 48) provided the following omnibus conception of institutions:

- institutions are social structures that have attained a high degree of resilience;
- institutions are composed of cultured-cognitive, normative and regulative elements; that, together with associated activities and resources, provide stability and meaning to social life;
- institutions are transmitted by various types of carriers, including symbolic systems, relational systems, routines, and artefacts;
- institutions operate at multiple levels of jurisdiction, from the world system to localized interpersonal relationships.

Institutions by definition connote stability but undoubtedly they are subject to change processes too. The common interest is in the ways in which institutions provide stability and meaning to social life. In the following paragraphs, we will briefly discuss the uses of the concept of institution as it is used across the different disciplines.

First, we will focus upon the "old" institutionalisms within the different disciplines. Then, we will focus upon the neo-institutional traditions within economics and political science. Neo-institutional theory as developed by organisational sociologists, which is the main theoretical focus of this dissertation, will be discussed more in depth in a separate section.

Yet, before we proceed we would like to justify our focus on institutions rather than on culture. Obviously there is much overlap between the definitions of culture and institutions. The emphasis on culture as values, schematic representations, knowledge structures, belief and meaning systems transmitted through various carriers mimics to a high degree Clifford Geertz' definition of culture. Culture, Geertz (1973: 89) notes, *"denotes a historically transmitted pattern of meanings embodied in symbols, a system of inherited conceptions expressed in symbolic forms by means of which men communicate, perpetuate,*

and develop their knowledge about and attitudes toward life." It is also close to the conception of culture offered by Geert Hofstede (2001: 9) as "*the collective programming of the mind that distinguishes the members of one group or category of people from another.*" The emphasis placed on institutions in this study is predominantly driven by the relative importance of the regulative aspects of international cooperation. Laws, policies, rules and regulations exert a strong on these programmes.

2.1.1 Economic Institutionalism

The origins of institutional theory in economics can be traced back to "Methodenstreit", the discussion concerning the appropriate scientific methods in the social sciences, in the late nineteenth century (Scott, 2001). A group of German and Austrian scholars, drawing on work from Hegel and Kant, challenged the main assumptions underlying the classical convention in economics, that economics could be reduced to a set of universal laws and principles. These scholars emphasized that economic activity was rooted in a social framework, shaped by a set of cultural and historical patterns. These scholars eschewed the classic notion of "economic man", and advocated an economics informed by more realistic models of human behaviour. Carl Menger, one of the main defenders of the classical approach, insisted on the value of simplifying assumptions and economic models that could span both time and space. While he did not deny the importance of broader historical and institutional forces in shaping economic life, he rather argued that social phenomena themselves deserved greater theoretical explanation (Scott, 2001: 2).

Reconciliation between the protagonists and antagonists of an institutionally informed economics proved impossible and it was a couple of decades later that a few institutional economists gained prominence in the field. One of the main criticisers of "Homo Ecomomicus" was Thorstein Veblen. He took stance with the "*hedonistic conception of man as that of a lightning calculator of pleasures and pain*" (1898/1998: 403). Instead, he argued that much behaviour was governed by habits of thought and conventions.

Another prominent figure among institutional economists was John R. Commons. He too was unsatisfied with conventional wisdom of economics, and argued that the transaction would be a more suitable unit of analysis for economics. "*The transaction is two or more wills giving, taking, persuading, coercing, defrauding, commanding, obeying,*

competing, governing, in a world of scarcity, mechanisms and rules of conduct" (Cited in Scott, 2001: 3). As Van de Ven (1993) remarked in this notion of the transaction, Commons went further than the accounts of the transaction given by most neo-institutional economists working within the transaction-costs theory as developed decades later by Williamson (1981). "*To Commons, the institutions existing at a specific time represent nothing more than imperfect, and pragmatic solutions to reconcile past conflicts; they are solutions that consist of a set of rights and duties, an authority for enforcing them, and some degree of adherence to collective norms of prudent reasonable behavior*" (Van de Ven 1993: 142). Commons paid careful attention to how collective action both constrained and enabled individual action.

In many respects the interests of these early economic institutionalists have a lot of affinity with the neo-institutional tradition in organisational sociology and its emphasis on the role of habit and convention in economic processes. Not surprisingly, the previously mentioned Thorstein Veblen is also known as one of the founding fathers of sociology. This approach stressing the role of habit and convention, however, is less common in the work of current neo-institutional economists (Scott, 2001). They tend to place much more emphasis on questions related to the creation of institutions based on rational-actor models. Mancur Olson, for example, in his formulation of the collective action draws heavily on rational-economic principles, when he proposes that rational self-interested individuals as members of large organisations will not act collectively when there is no alternative incentive involved besides the obtainment of the common interest (Olson, 1965).

2.1.2 Political Institutionalism

In political science, around the turn of the century, a number of prominent scholars were engaged in the examination of institutions. Most notable are two Ivy League university presidents, Woodrow Wilson, who would later become President of the U.S., and T.D. Wilson. Both were interested in the examination of workings and functioning of the state (Peters, 2005). However, as Peters (2005: 5) noted, later the state was generally left out of the scope in American political science until Theda Skocpol and others (Evans, Rueschemeyer and Skocpol, 1985) revived an interest in the state during the mid 1980s. In Europe, political science was emerging as a separate field of inquiry around the turn of the

century (Peters, 2005). Political institutions were generally studied within other fields, most notably law. As a consequence, much of the work relied on the formal analysis of institutions (Peters, 2005).

2.1.3 Sociological Institutionalism

Sociologists have historically displayed a more consistent emphasis on institutions during the former century (Scott, 2001). As one of the earlier authors in American sociology, Herbert Spencer developed an influential conception of institutions, which is still reflected in writings in current mainstream sociology. He viewed society as an organic system evolving through time. Adaptation of the system to its context was achieved via the functions of specialized "organs" structured as institutional subsystems. *"Not only has a society as a whole a power of growth and development, but each institution set up in it has the like – draws to itself units of the society and nutriment for them, and tends ever to multiply and ramify. Indeed, the instinct of self-preservation in each institution soon becomes dominant over everything else; and maintains it when it performs some quite other function than that intended, or no function at all"* (Spencer, 1894/2006: 19).

The ideas of Spencer are also reflected in the works of William Graham Sumner. He defined institutions as consisting of a concept and a structure. The concept defines the purpose or function of the institution, and the structure is the materialisation of the concept, i.e. the manner in which the idea is put into practice (see Scott, 2001: Ch.1). Among European theorists especially Max Weber has had a profound influence on institutional theory. Although he did not use the term institutions, he often showed a concern with how cultural and institutional understandings shape social structures and behaviour.

2.1.4 New Institutional Economics

Nobel Prize winner Ronald Coase (1937) is broadly acknowledged to be the father of the new institutional economics. His essay "The Nature of the Firm" asks if markets are so efficient, why do we see so many firms? Basically, he was motivated to find an answer to why some economic exchanges are carried out in firms instead on markets. His principle answer is that there must be *"a cost of using the price mechanism*" (1937: 390). These "transaction costs"

consists of *"the costs of negotiating and concluding a separate contract for each exchange transaction which takes place on a market*" (1937: 390-391).

Much later Oliver Williamson picked up the ideas and extended them in what is now widely known as transaction cost economics (TCE). Williamson (1981) departs from neo-classical economics by assuming that humans are (1) boundedly rational, as well as (2) opportunity seekers with guile (Williamson 1981: 533). Williamson proposed that transactions can be mediated trough a continuum of governance structures ranging from markets to organisations, with a variety of hybrid forms, such as alliances and joint ventures constituting the intermediate range of the continuum. The choice of a governance structure to carry out a particular transaction depends on a number of characteristics of the transaction, including the repetitive nature of the transaction, the degree to which a transaction is specific to the organisation, and uncertainty with respect to the final outcome of the transaction. While Williamson's transaction costs economics has lessened the main assumptions of transaction costs economics, his approach remains within the realm of the rational actor models that much of economics draws upon.

A related approach, within what has come to be known as the new institutionalism in economics, is the one developed by economic historian and Nobel Laureate Douglas North. His approach also breaks further with neoclassical economics. *"A neoclassical world would be a jungle and no society would be viable"* (North, 1981: 11; cited in Godard, 2002: 249). Where Williamson is primarily concerned with understanding how different forms of governance structures economize on transactions costs at the organisational level. North (1990) focuses on how institutions drive economic development and change in societies. His conception of institutions as both formal and informal rules that constrain individual behaviour and shape human interaction (North, 1990) is also more akin to the conceptualisation of institutions by earlier institutional economists. While North (1990) shares with Williamson an interest in transaction costs, he tends to focus on how broader institutional frameworks drive transaction costs. Williamson instead tends to focus on transaction costs as determining the choice for a particular governance structure (Hirsch and Lounsbury, 1996; Scott, 2001).

2.1.5 New Institutionalism in Political Science

Within the new institutionalism in political science, two rival camps have emerged: historical institutionalists and rational choice institutionalists. Both point to the importance of political institutions, but hold different opinions on a number of issues.

Historical institutionalists emphasize that political institutions are not simply determined by society, but exert themselves independent effects upon society. They also note that preferences are not exogenous to policy processes, but are at least partially shaped in political processes. Furthermore, they tend to reject that history is efficient, and that many outcomes are not necessarily the result of purposive behaviour, but rather from unintended consequences and constrained choice (March and Olsen, 1984). Similar to North (1990), they also draw on a general definition of the institutions as *"both formal organizations and informal rules and procedures that structure conduct"* (Thelen and Steinmo, 1992: 2).

This is also seen in the distinction that March and Olsen (1989) have drawn between human action based on a *"logic of instrumentality"* or expected consequences and a *"logic of appropriateness".* In the former, the basic question with which an actor is confronted is: "What is in it for me?", while in the latter the question that needs an answer is "What does a person like me do in these kinds of situations?" Most rational choice theorists tend to focus on the former. Neo-institutionalists tend to be equally interested in the latter.

In rational choice institutionalism, institutions tend to enter the political arena as constraints on self-interested behaviour, providing the rules of the game structuring actors' preferences and interests. Rational choice institutionalists are unified by assuming that individuals will maximize their interests and that this maximisation will produce dysfunctional behaviour at the collective level, such as free-riding and shirking (Peters, 2005: 49-50). Given this assumption they are inclined to focus on questions of institutional design (Peters, 2005). This for example, is visible in the Institutional Analysis and Development Framework, which focuses on how the interaction the context, action arena and patterns of interaction dictate the outcomes of a policy reform (Ostrom, Gardner, and Walker, 1994).

Elinor Ostrom who together with Oliver Williamson received the Nobel Prize in Economics for their research on the working of institutions in economic life, emphasized the rule-based nature of institutions. Ostrom (1990: 51) defined institutions as, "*the sets of*

working rules that are used to determine who is eligible to make decisions in some arena, what actions are allowed or constrained, what aggregation rules will be used, what information must or must not be provided, and what payoffs will be assigned to individuals dependent on their actions". All rules contain prescriptions that forbid, permit, or require some action or outcome. Her work focussing upon the formation and perpetuation of institutions in so-called 'common pool resources' extended the economic analysis of institutions into sectors that were traditionally regarded as 'less' economic, belonging more or less to the public, non-profit sector.

Historical institutionalists, tend to go beyond this, trying to explain how institutions themselves shape the interests and preferences of actors (Thelen and Steinmo, 1992). Although differences between these approaches continue to persist some authors have recently noted that the differences may have been exaggerated (e.g. Campbell, 2004).

2.2 Origins of Neo-Institutional Theory in Organisational Sociology

The foundations for neo-institutional theory in organisational sociology were laid out in two articles, one written by Meyer and Rowan (1977) and the other written by DiMaggio and Powell (1983). They were in part a reaction and in part an extension of the earlier "old institutionalist" work authored by Philip Selznick (1949) and associates, who in their scepticism towards rational actor models had highlighted the *"shadowlands of informal interaction"* in organisations (Selznick, 1949: 260; see also: Powell and DiMaggio, 1991).

2.2.1 Meyer and Rowan on Rationalized Myths

Meyer and Rowan (1977: 341) argued that the formal structure of many organisations in complex modern societies reflected rationalized myths prevalent in their institutional environments. Drawing on the work of Berger and Luckmann (1967) they asserted that:

"*Institutionalized rules are classifications built into society as reciprocated typifications or interpretations (Berger and Luckmann, 1967: 54). Such rules may be simply taken for granted or may be supported by public opinion or the force of law (Starbuck, 1976). Institutions inevitably involve normative obligations but often enter into social life primarily*

as facts, which must be taken into account by actors. Institutionalization involves the processes by which social processes, obligations, or actualities come to take on a rulelike status in social thought and action."

Organisations in a sector tend to become isomorphic, i.e. they tend to take the same shape and develop the same content, as a consequence of these rationalized myths, incorporating them into their formal structures, to gain social support and legitimacy from their wider environment, thereby ensuring their chances of survival. Legitimacy – *"... a generalized perception or assumption that the actions of an entity are desirable, proper or appropriate within some socially constructed system of norms, values, beliefs and definition*" (Suchman, 1995: 574) – was awarded primacy over efficiency. Organisations survive not so much because they are capable of efficiently coordinating and controlling their activities, but because they are able to conform to the rules, norms, values and mores prevalent in their institutional environment (Meyer and Rowan, 1977).

However, Meyer and Rowan (1977) also noted that conformity to institutionalized rules and typifications often conflict with efficiency criteria. As a result organisations tend to buffer their formal structure from their technical core and there is only a loose coupling of formal organisational structure and actual technical activities performed within the organisation. Thus, organisations' conformity to institutional pressures is largely ceremonial. They derived their insights from their research of public schools, in which new programmes aimed to improve education of students. Meyer and Rowan (1977) observed that while many of the schools had formally implemented these programmes, actual teaching practices in the class- room basically remained the same.

2.2.2 DiMaggio and Powell's revisiting of Weber's Iron Cage

DiMaggio and Powell (1983) extended the institutional isomorphism argument a few years later. They distinguished three types of institutional isomorphism, i.e. the tendency that organisations – predominantly within one sector - tend to take the same shape and develop the same policies and procedures. *Coercive* isomorphism, which is dependent on force, concerns the ability to set rules and apply sanctions by powerful actors (e.g. the state) in the institutional environment of organisations. *Normative* isomorphism is based on the pressure for conformity to norms and values, and has been associated primarily with professional and

trade associations. *Mimetic* isomorphism, finally, involves the mimicking of other organisations under conditions of environmental uncertainty. DiMaggio and Powell (1983: 148) suggested that these institutional mechanisms would exert their greatest influence at the level of the organisational field or sector, which they intended to mean: *"those organizations that in the aggregate constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products."*

Their arguments generated a spin-off of empirical research. Studies typically examined how a wide range of different types innovations, including civil service reforms (Tolbert and Zucker, 1983), total quality management (Westphal, Gulati and Shortell, 1997), the adoption of the multidivisional form (Fligstein, 1985; Palmer, Jennings and Zhou, 1993), modern personnel administration (Baron, Dobbin and Jennings, 1986), and human resource management (Dobbin and Sutton, 1998) diffused within in an organisational field (see Mizruchi and Fein, 1999 for a review and critique). However, as Mizruchi and Fein (1999) in their analysis revealed, a disproportionally large number of empirical studies focused solely on the mimetic isomorphism hypothesis. This seems consistent with the emphasis then placed by sociological neo-institutional theorists on the cultural-cognitive dimension of institutions (Scott, 2001).

2.2.3 Unintended Consequences of the Original Statements

The early theoretical statements of Rowan and Meyer (1977) and DiMaggio and Powell (1983) and the subsequent empirical work produced some unintended consequences. First, an emphasis on the macro-side of institutions had seemed to develop. Although institutional arguments apply at all levels, from interpersonal systems to world systems (Scott, 2008; Zucker, 1977), the early accounts paved the way for neo-institutionalists to analyse those social systems in which institutional effects would expectedly exert their most profound influence. Thus following the propositions of DiMaggio and Powell (1983) a large body of studies focused on organisational fields (i.e. sectors such as health care or schools). Others have attempted analyses at the level of societal sectors (Scott and Meyer, 1991) and at the world systems level (Meyer, Boli, Thomas and Ramirez, 1997).

The emphasis on macro-level institutional phenomena had another consequence. Studies did not address the institutions per se, but rather their consequences (i.e. their effects). Relatively little attention was placed on how institutions emerged in the first place. The emphasis that was placed on the shared conceptions and meanings that constitute the nature of social reality (Weber and Glynn: 2006:1643; Scott, 2001) - in the sociological variant of neo-institutional theory - reinforced the theory's emphasis on the stabilizing effects of institutions. Institutional change became primarily viewed as convergent change (Scott 2001; Greenwood and Hinings, 1996), in which institutions drive organisations within a sector or field towards increased similarity.

Third, many studies tended to focus predominantly on public sector organisations and fields, where efficiency considerations were generally considered to be of less concern than in organisations subjected to competitive market circumstances; there was even mention of "permanently failing organisations" (Meyer and Zucker, 1989). Meyer and Rowan (1977) clearly distinguished institutional from technical considerations in the formal structure of organisations. DiMaggio and Powell (1983) also made a clear distinction between institutional and competitive pressures both of which drove organisations within an organisational field towards similarity. Scott (2008: 436) noted how institutional theorists almost made a wrong turn in 1980s and early 1990s, "[g]*iven the stance taken by these foundational essays, institutional theory stood in danger of becoming a theory of socially legitimate albeit inefficient organizations. A focus on the explanation of non-rational features of organizations threatened to condemn institutional theorists to play the role of subordinate hand-maiden to rational analysts (in their numerous guises), who could safely devote themselves to the adult concerns of constructing accounts of efficient organizations, leaving to institutionalists the scraps (error, subterfuge, ritualism) accounting for the error-term in their equations. Not a good division of labour, I think, particularly for institutionalists*."

Later on, some of these earlier statements by Meyer and Rowan (1977) and DiMaggio and Powell (1983) became revised. Scott and Meyer (1991) suggested that there are organisations that work in both highly institutional and highly technical environments (e.g. banks and hospitals). Likewise, some organisations operate in both low competitive and low institutional environments (e.g. country clubs, day-care centres), with low institutional

environments characterised by limited interference of regulations and the professsionalization.

2.2.4 Interests and Agency in Neo-institutionalism in Organisational Sociology

DiMaggio (1988) was one of the first to argue that without politics it is impossible to explain either the sources of institutionalisation and deinstitutionalisation. Instead of analysing institutions, scholars should be more sensitive to the process of institutionalisation. A focus on the latter would reveal *"… that institutionalization is a product of the political efforts actors to accomplish their ends and that the success of an institutionalization project and the form that the resulting institutions takes depend on the relative power of the actors who support, oppose, or otherwise strive to influence it."* (1988: 13)

He proposed to incorporate interests and agency more fully in institutional theory by the notion of "institutional entrepreneurs," which he borrowed from Eisenstadt (1980). Institutional entrepreneurs are actors who are capable of institutionalizing new logics and practices, in which they see "an opportunity to realize interest that they value highly" (DiMaggio 1988: 14). The literature on institutional entrepreneurship grew rapidly after his publication (see Leca, Battilana and Boxenbaum, 2008 for a review). Leca, Battilana and Boxenbaum (2008) identified more than 60 articles in academic journals in North America and Europe in which the concept of institutional entrepreneurship stood central.

However, the concept is not without its controversies. Some have suggested that the whole idea of institutional entrepreneurship is particularly uninstitutional (Seo and Creed, 2002). The problems surrounding this idea relate to the classic agency-structure debate in sociology (Giddens, 1984). Generally, this problem is referred to as the *"paradox of embedded agency"* (Garud, Hardy and McGuire; 2007; Holm, 1995; Seo and Creed, 2002; Sewell, 1992). In essence, the issue is how can actors, whose identities and interests are shaped by the regulative, normative and cognitive elements within a field, escape these elements by introducing new models and practices within a field? The general assertion is that the dominant actors within an organisational field have the resources to affect institutional change, but lack the incentives to do so. While peripheral actors often have the incentives to affect institutional change given their underprivileged status, they often lack the necessary resources to achieve it.

In a similar attempt to incorporate agency and interests in institutional theory Oliver (1991) proposed to combine institutional theory with resource dependence theory (Pfeffer and Salancik, 1978). She posited that compliance to institutional pressures from organisations' wider social contexts, although perhaps the most common, is only one response that organisations could adopt. Other responses to institutional pressures that organisations could adopt include compromise, avoidance, defiance, and manipulation. Hence, organisations on their turn may be able to defend their interests and sometimes effect institutional changes in the environment surrounding them.

2.3 The Concept of Logics

2.3.1 Conceptualizing Institutional Logics

The concept of institutional logics has provided neo-institutional theorists with a way out of viewing actors as *"cultural dopes"* (Garfinkel, 1967; Swidler, 1986), with a focus on almost mindless conformity of individuals and organisations to institutional pressures from their wider environment, characteristic of early neo-institutionalist theorizing (e.g. Meyer and Rowan, 1977; DiMaggio and Powell, 1983). Instead, culture is now considered to be a *"repertoire or toolkit"* (Swidler, 1986: 273), which socially skilled actors (Fligstein, 2001) may use to solve whatever problems they encounter. Cultural conflict and institutional contradictions are viewed as the outcome of the encounter of incompatible logics (DiMaggio, 1997; Friedland and Alford, 1991: Seo and Creed, 2002). This debate once again underlines how much cultural and institutional theories are interwoven.

One of the first pioneers of the concept of logics of action was the French sociologist Lucien Karpik (1978), who noted that the classical Weberian notion of rationality – the adequacy of means to ends – was insufficient to describe the firm. He argued: "what characterises the firm is a *chain of ends and means* or a *series of primary objectives and of subsidiary objectives* … [emphasis in original]". They are both principals of regrouping and dispersal as well as principles of action around which individuals and groups organize their attitudes and behaviour (1978: 47). He suggested that the orientations and practices of

individuals and organisations cannot be isolated from the societal wholes to which they belong.

His work focused on the distinction between two forms of capitalism. The first form, "classical capitalism" (e.g., energy, semi-finished goods, automobile industries), is characterized by industrial concentration and preference for oligopolistic situations, and which operates through a 'growth' principle. The second, "technological capitalism" (e.g., chemical, pharmaceutical and electronics industries), is primarily based on the concentration of material and symbolic resources and by the fact that its functioning is governed by the rule of 'puissance' (power). All this following Lucien Karpik (1978).

Friendland and Alford (1991) raised a similar concern with the organisation of the societal order and how it enables and constrains the actions of the organisations and individuals. They emphasized that "*an adequate social theory must work at three levels of analysis – individuals competing and negotiating, organizations in conflict and coordination, and institutions in contradiction and interdependency. Institutions must be conceived of as simultaneously material and symbolic. However, no institutional order should be accorded primacy a priori. To restore meaning into social analysis in a way which is neither subjectivist, functionalist, nor teleological, the notion of institutional contradiction is vital*" (1991: 241). These levels should be seen as '*nested*,' where organisation and institution specify higher levels of constraint and opportunity for individual action (Rao and Kenney, 2008: 354).

Friedland and Alford have taken the notion of logics of action to the institutional level. For them most Western countries have developed a complex society, in which different institutional sectors, each with a distinct institutional logic, are operative. These institutional sectors often contradict with one another. These authors emphasize the way in which interests, norms and values are institutionally shaped and constrained. Institutions not only constrain the ends to which behaviour should be directed, but the means by which those ends are achieved. "*Institutions provide individuals with vocabularies of motives and with a sense of self. They generate not only that which is valued, but the rules by which it is calibrated and distributed…. Nonetheless, individuals, groups, and organizations try to use institutional logics to their own advantage*" (Friedland and Alford, 1991: 251).

Earlier work in sociological institutionalism, emphasizing the way in which organisations were subjected by pressures to conform to rules, norms, and values

predominant in their wider environment, tended to be contrasted with economic approaches, assuming rational utility maximizing individuals and organisations (DiMaggio and Powell, 1983; Scott and Meyer, 1991). So for example, Scott and Meyer (1991) argued that technical efficiency was the primary basis for evaluation of organisational effectiveness in the private sector, while conformity to institutional pressures would be more of a concern for organisations operating in the public sphere. However, the work of Friedland and Alford (1991) and Boltanski and Thévenot (2004) opened a way of viewing the utility maximizing individual as belonging to a particular institutional order, made possible by certain historical conditions that emerged during the Enlightenment. *"For whatever reason, some societies do not conceptualize, let alone value, an abstract individual. Clearly the achievement of individuality was as much a cultural transformation as it was the natural outcome of the division of labor"* (Friedland and Alford, 1991: 239).

Early empirical studies on institutional logics tended to focus on shifts in dominant logics over time. For example, Fligstein, (1985) developed the idea of a conception of control, which is closely related to the notion of logics and found in a longitudinal study of top 100 Fortune companies that the adoption of the multidivisional form greatly depended on whether the firm's corporate executive officer had a background in marketing, finance, or engineering. Moreover, he observed that corporate executive officers of each of these occupational communities came to power during specific time periods.

In their historical analysis of institutional change in the health care sector in the California Bay area Scott et al. (2000) observed the shift from an institutional logic of professional care emphasizing quality of medical care, followed by one based on the logic of equity of access to service, to one relying on the operation of market forces and the intermingling of large corporate groups, which became based on principles of efficiency.

Currie and Guah (2007) examined the ways in which conflicting institutional logics threatened the implementation of the National Programme for IT in the UK health care sector. Unlike traditional studies in institutional theory that tend to provide linear models of institutional change, they showed how conflicting logics in the organisational field, triggered a non-linear process of institutional change. Their interview data pointed *"to conflicting forces in the interpretation, legitimation and mobilization, were threatening the survival of the NPfIT, as the innovation was failing to become institutionalized in a political battlefield."*

Dobbin and Sutton (1998) have examined the way in which government induced personnel legislation led to the establishment of professional personnel departments. Initially, this legislation was viewed as a burden. The logic followed was one of legal compliance. Later, under the Human Resource Management paradigm personnel managers were able to redefine workers as strategic assets to organisations and their work as integral to organisations' strategies and performance. In essence, the institutional logic of legal compliance shifted to one based on a strategic resource logic (see Weber and Glynn, 2006 for this point).

Zajac and Westphal (2004) drew on the concept of institutional logics to account for changes over time in stock market reactions and found support for their contention that changes in prevailing belief systems were responsible for these changes. They found that stock market reactions to stock repurchasing plan announcements changed significantly from negative during the late 1970s and early 1980s to positive from the mid 1980s onward. They provided evidence that this shift in stock market reactions came about as a consequence of a shift from a corporate governance logic toward an agency logic. Their study is particularly interesting since they provided evidence for a sociological explanation in a sector, which is generally considered to be subjected most to the market imperatives of economic theory emphasizing utility maximizing individuals.

Green, Babb and Alpaslan (2008) point to the importance of rhetoric in the construction and competition of institutional logics. They examined the competition between a Managerial Capital logic versus an Investor Capital logic. The former specifies that managers should be in control of the firm because of their superior knowledge. The latter emphasises shareholder value maximisation and points out that managers are nothing more than the agents of their firm's shareholders and must be encouraged to work in the best interests of shareholders (Green, Babb and Alpaslan, 2008: 44).

Chung and Luo (2008) examined the key institutions such as the family, market, and government in emerging economies and showed how they supplied competing logics that influence restructuring strategies. They presented an instance in which the logics of family control, shareholder value, and stakeholder balance clashed, and examined the consequences of contemporaneously conflicting institutional logics.

Owen-Smith and Powell (2008: 611) in their research in the biotech field revealed how the organisational form of the dominant players in a network shapes the character of social capital in a community. They noted that where universities dominate, a logic of discovery that favours openness and information diffusion prevails and membership alone suffices to increase rates of innovation. In contrast, when for-profit organisations are key players in the network and more 'closed,' proprietary logics are at the fore, a central network position is essential (Owen-Smith and Powell, 2008). In addition to shifting the ways that organisations extract benefits from their networks, the different logics associated with partners of disparate form shape strategies for innovation, the kinds of connections firm forge, and the markets they seek to serve. In this sense, the relational and structural embeddedness of economic action depends not just on the networks but also on the orientations of participants to the fields and logics that render ties sensible and help determine the shape and effects of structures (Owen-Smith and Powell, 2008:618).

More closely related to the topic of this thesis is the work of Ulrika Mörth (2003). In an historical analysis of the European armaments field, she traces the construction of a European armaments field around the competition between two competing frames (cf. Goffman, 1974: 21) each embodied in a different set of European institutions (also referred to as pillars[1]). The *'defence frame'*, emphasizing military capacity problems and the need for a common defence policy, is primarily tied to institutions and networks and organisations in the second pillar of the European Union (Mörth, 2003: 52). The *'market frame',* emphasising the creation of a European market for armaments and the reduction of national defence industry protectionism of European governments, is strongly associated with actors attached to the first pillar of the European Union. Over time, the two organisational fields became more closely interconnected, and frame competition became more intense when the actors in both organisational fields engaged in a political struggle over the definition of the armaments issues. Eventually, the European Commission was able to reframe the issue into a modified market perspective, "… *by reframing the armaments and industry issue the*

[1] The European Union is made up of three different 'pillars'. The first one, the European Communities, is the oldest and deals with economic, environmental and social policies. The second pillar, handles security and foreign policy issues. The third pillar deals with crime fighting. The first pillar was until 2009 the only one with a legal status. Within each of these pillars different sets of actors were involved with little overlap of actors between the pillars. In the Lisbon Treaty of 2009, the idea of the pillars was formally abandoned.

Commission manages the conflict between the market and defense frames. Thus, frame competition will persist, but in a less obvious way. … The sense-making process, in which various frames are presented, functions as an important component in generating cohesion within the Commission (Mörth, 2003: 104-105).

Others (Hyvönen, Järvinen, Pellinen and Rahko, 2009) have presented a comparative case study of differences in institutional logics of two units within the Finish Defence Forces. These two units triggered different responses to pressures from State Audit Office to alter their management accounting systems. In one of the units, management accounting had become deeply institutionalised as part of a military officer's competencies. In the other unit, this institutionalisation had not taken place. Hyvönen, Järvinen, Pellinen and Rahko (2009) examined the way in which this difference institutional logic influenced the units' strategies in dealing with pressure exerted by the State Audit Office to change their management accounting systems in accordance with the implementation of a new enterprise resource planning system. They showed how different logics led to an adoption of different institutional responses: a resistance strategy in the unit where management accounting had become deeply ingrained in military officer's competencies, and a ceremonial acquiescence strategy where management accounting was less considered to be part of an officer's core skills.

2.3.2 National Institutional Logics

Our intent to use the notion of institutional logics at the national level may sound somewhat counterintuitive given our summary of the literature presented in the foregoing paragraphs. Neo-institutionalists have persuasively associated institutional logics with the organization of societal orders such as the family, the state, religion, science etc. and tend to view societal changes and conflict as the outcome of the contradictions of institutional orders (Friedland and Alford, 1991; Thorton, 2004). Although analysing institutional logics at the national level would not necessarily be the most obvious choice for empirical research of (American) neo-institutional scholars, we argue that it is not inconsistent with the original ideas. The organisation of nations' institutional orders, the dominance of certain institutional orders over others, the degrees of integration and differentiation between the orders, as well as the norms and values associated with a particular institutional order are likely to vary across

nations. As such, they are likely to give rise to different institutional logics at the national level. Indeed, much American institutional scholars appear to have neglected the national dimension, since in the American context this issue is not readily apparent. In the European context, the national dimension has a deeper impact, simply because what constitutes the European Union are its European member states. This can definitely be seen in the current discussion surrounding the debt problems of Greece, which are fought out between different member states.

A number of earlier studies have suggested that the organisation of a nation's institutional orders can produce a particular national institutional logic (Chung and Luo, 2008; Luo 2007. Maurice, Sorge and Warner, 1980). Close to the empirical setting of our study that has examined institutional logics at the national level is the work of Bremberg and Britz (2009). These authors examined how diverging institutional logics of European member states affects the degree of cooperation among member states on EU civil protection policy. They compared the institutional logics of Spain and Sweden to understand the diverging positions on the future of European Union civil protection. Their analysis of the belief system and accompanied practices of Spain revealed the existence of a formal definition of civil protection, which makes clear that the concept refers to the physical protection of people and goods during war and in peacetime, and that civil protection organisationally belongs to the Ministry of Interior in a generally decentralized structure, but with centralisation possibility in cases of emergence (Bremberg and Britz, 2009: 301). In Sweden a different picture of the dominant institutional logic emerged. Unlike the situation in Spain the concept of civil protection is not classified into the Swedish belief system. Civil defence in Sweden is a wartime concept. Under peacetime circumstances protection and preparedness are considered more important concepts. Moreover, in the Swedish context it is unclear how those concepts are related to national security issues. Associated practices in Sweden pointed to a decentralized system coordinated largely by local authorities, with virtually no possibilities for national authorities to conduct practical disaster relief (Bremberg and Britz, 2009:301).

They revealed that the divergent institutional logics within the national security fields of both nations hamper cooperation in the development of the EU civil protection policy. The different positions adopted by these nations in the development European Union civil

protection policy reflect their underlying institutional logics. Spain together with a number of Southern European states advocates a centralized role for the European Commission, while Sweden prefers a predominantly intergovernmental approach, reflecting its lack of a centralized civil protection system in its own national context (Bremberg and Britz, 2009). Eventually an agreement was reached on a very broad definition of civil protection, which allowed the persistence of diverging institutional logics. Consequently, further cooperation in this matter, despite the agreement, proved difficult (Bremberg and Britz, 2009). This is a first example of institutional logics at the national level, to which we will turn later more explicitly.

Work in comparative political economics has noted considerable variety in the operation of national economies, even in the capitalist economies of the western world (Hall and Soskice 2001; Jepperson, 2002; Prasad, 2005; Whitley, 1994). A number of theories have gained prominence within the field. We will briefly review those that seem relevant to this study.

The Varieties-of-Capitalism-approach developed by Hall and Soskice (2001) emphasises the manners in which firms in national economies resolve coordination problems, which are central to their core competencies (Hall and Soskice, 2001: 6-7). They note five spheres in which they must develop relationships with other economic actors. The first one involves industrial relations, in which the main challenge is how to coordinate with other economic actors, i.e. employees, labour unions and other employers, over wage bargaining and other work conditions. The second sphere of vocational training and education refers to the problem that firms face is how to ensure sufficient skill levels of potential employees. Within the sphere of corporate governance, the question is how to secure capital and the manner in which investors keep track of the return on their investments. Within the fourth sphere of inter-firm relations, the main coordination problem is the sharing of proprietary knowledge and appropriation concerns in alliances. Fifth, within the sphere of employees firms have to ensure their workers possess the appropriate competencies to further the interests of the firm.

The ways in which these five spheres of coordination problems are solved among the economic actors in national economies present the basis for comparison within the varieties of capitalism approach. Hall and Soskice draw a primary distinction between two ideal types

of political economies constituting a continuum on which many countries can be ranked. In liberal market economies (LMEs), the primary mechanisms through which firms coordinate their activities are hierarchies and competitive market arrangements. Coordination among firms is facilitated through the 'the invisible hand' in deregulated markets and with minimal state intervention. In coordinated market economies (CMEs), firms depend more on non-market relationships to coordinate with other actors and to develop and maintain their core competencies (Hall and Soskice, 2001: 9). These relationships are often based on cooperative relations, relational or incomplete contracting, and monitoring of exchange of private information through networks. In liberal market economies coordination takes place through the price mechanism in competitive markets, in coordinated market economies coordination involves a great deal of strategic interaction among economic actors.

Whereas the aforementioned studies did not formally employ the concept of institutional logics, they do provide ample evidence that national institutional frameworks shape the interests, practices and values of individuals and organisations. To give an example: in an early examination of the processes of integration and differentiation in manufacturing units of firms in France, Germany and Great-Britain, Maurice, Sorge, and Warner (1980 found considerable variation among these countries stemming from the manner in which education, training, recruiting, and promotion of workers is organized within these countries.

Whitley (1992) developed the notion of *"business recipes"* which take their form from the way in which the national business systems are organized. Business recipes, he argues: "*are particular ways of organizing, controlling, and directing business enterprises that become established as the dominant forms of business organization in different societies. They reflect successful patterns of business behaviour and understandings of how to achieve economic success that are reproduced and reinforced by crucial institutions"* (Whitley, 1992: 125). He suggests that distinct business recipes find their origin in the specific configuration of the key dimensions of business systems: the nature of firms as economic agents, the interconnections between the firms, and the manner in which coordination and control is organized and distributed (Whitley, 1992).

Similarly, cross-cultural scholars have noted considerable variety in the norms and values of national cultures and their impact on the management of organisations working in

an international context, such as multinational companies and international joint ventures, mergers and acquisitions (e.g., Barkema and Vermeulen, 1997; Hofstede, 2001; Morris, Podolny, and Sullivan, 2008; Smith, Peterson and Thomas, 2008). This research strand has even led to the development of a new educational field in international management and international business studies.

The earlier mentioned Varieties-of-Capitalism-approach is particularly sensitive to the institutional framework of national economies that provide support for the role and degree of strategic interaction in coordination. Moreover, it adopts a view of institutions, which comes close to neo-institutional theory in organisational sociology. Alike neo-institutional theorists, Hall and Soskice (2001) emphasize the importance of the informal rules and shared understandings that underlie coordination through strategic interaction. They argued that these: *"… shared understandings are important elements of the 'common knowledge' that lead participants to coordinate on one outcome, rather than another, when both are feasible in the presence of a specific set of formal institutions"* (2001: 13).

Luo (2007) examined the way in which national institutional logics as embodied in country specific political institutions influence the way in which individuals perceive and interpret a widespread Human Resource Management model, the continuous learning model. In a comparative analysis Luo (2007) used the degree of statism and the degree of corporateness to assess individuals' preferences for continuous learning and for broad versus narrow employee training. His findings confirm that national institutional logics structure the perceptions and interpretations of individuals in a country. Specifically, people from statist and corporatist countries have less preference to be trained continuously than those from nonstatist and noncorporatist countries, and people from noncorporatist countries prefer broad training over narrow training.

Together, these studies suggest that there is theoretical support for our treatment of institutional logics at the national level. In chapter 3, we will describe the national logics in defence industry matters of the actors involved in this study more thorough. For that we will draw upon cross-cultural and comparative studies examining the defence industrial policies and general business climates of the countries involved in this study.

2.4 Alignment of Logics

Most studies present an unusually consensual picture of institutional change, in which one dominant set of institutional logics is gradually replaced by a successor. Most writers do underscore the politics involved, but the research designs used often do not allow the capturing of the micro-dynamics involved (Bacharach, Bamberger, and Sonnenstuhl, 1996; DiMaggio, 1997; Lounsbury 2007). More recently scholars have come to recognize that environments often consist of multiple competing logics (Clemens and Cook, 1999; Djelic and Quack, 2003; Washington and Ventresca, 2004; Lounsbury, 2007). Similar ideas have recently been developed in the "economics of conventions" school in French sociology (Boltanski and Thévenot, 2004). Much of an actors' social capability may actually consist of his or her capability of activating the appropriate logic in a particular social context.

One should not easily think that all individuals belong to one of these institutional orders. In complex societies most individuals do not limit themselves to one particular set of institutional logics in order to render their lives meaningful. Many theorists have pointed at the contextual dependence of meanings (Bechky, 2003; Weick, 1969). This also holds for the activation of logics. For example, that one is a scientist does not necessarily imply that one cannot be religious as well. Similarly we should also be careful to analyse particular behaviours or actions as belonging to a particular institutional order, because some type of action or activity may be associated with different sets of values, meanings and practices. For example, the act of sexual intercourse may be associated with love, domination, fulfilling one's religious duties, and even a market exchange (in the case of a prostitute).

Boltanski and Thévenot (1999) managed to construct different institutional orders ('worlds') each possessing a different *"mode of justification".* For the construction of these modes the authors drew on text from political philosophers, who provided systematic accounts of the principles of equivalence underlying the 'modes of justification.' These modes of justification are often incompatible. These authors maintain that most individuals unproblematically know how to perform in each of these worlds and are generally capable of recognizing to which world a particular social situation belongs. Of most interest are 'ambiguous situations' (Boltanski and Thévenot, 1999), in which different logics apply. In these situations *'institutional exceptions'* may emerge in which *"framings of situations"*

conflict, basic values are challenged, and participants find themselves *"on a different page"* or *"wavelength"* (Orr and Scott, 2008: 566).

Social life is full of situations that are more transient in the sense that different logics could be applied. Is the 'market' capable of ensuring the proper protection of the environment? Or should the government intervene to establish a minimal level playing field for businesses by providing legislation? And socially skilled actors are often capable of tying their particular grievances to established institutional logics to advance their own interests (Friedland and Alford, 1991). Many of the contemporary marketing efforts of companies are aimed to associate their products, services and brand names to existing institutional logics to elicit demand for their products.

Although institutional logics generally remain in a state of contradiction (Friedland and Alford, 1991; Seo and Creed, 2002), occasionally they may promote the pursuit of the same interest. This is seen in a recent political debate on the subject of working at home in The Netherlands. The Dutch Green Left party proposes a new law that will spur employers to allow employees to work more from their homes. Their justification is primarily grounded in a discourse promoting the protection of the environment. The Christian party supports Green Left party's initiative, but their rhetoric draws from a logic valuing the family as the basic cornerstone of society because parents being more at home are believed to be conducive to the children's wellbeing.

2.5 Micro-Politics of (Hierarchical) Alignment of Logics

One study examining how logics of action are at the heart of the politics of micro-institutional

processes is the work by Bacharach, Bamberger and Sonnenstuhl (1996). They applied the concept of logics to account for the organisational transformation process that takes place when institutional level logics change and trigger adjustments in lower level logics. Their case revolves around major deregulation in the airline industry. Until 1978, the airline industry had been operating in an environment heavily regulated by the Civil Aeronautics Board (CAB). Competition had long been regulated by the CAB through the establishment of uniform prices, the allocation of routes based on system rationality, the arrangements of

mergers, and cooperation between labour and management (Bacharach, Bamberger and Sonnenstuhl, 1996: 485).

This institutional environment shaped the development of a quality-oriented logic among airline managers in which they tried to gain competitive advantage by providing quality services to customers. The logic of middle and lower management at that time were aligned. These pursued a 'communalistic logic' closely working together with the flight attendants to ensure they had loyal and skilled workforce providing quality services to customers. At the technical level, the flight attendants had adopted an *"acquiescence logic"*, which was aligned with the logic of middle and lower management. In a struggle for greater control of the work processes and a stronger recognition of their occupation, flight attendants tended to closely work together with middle and lower level. This situation drastically changed when the 1978 Airline Deregulation Act became in effect. As a consequence of this change the quality logic became replaced by a cost-oriented logic. Top management of airliners responded through the optimisation of their existing routes, by negotiating a two-tier wage system for their employees (to be able to compete with non-union carriers) and by rationalising the work of flight attendants and through a reduction in staffing levels on flights (Bacharach, Bamberger and Sonnenstuhl, 1996).

These rationalisation attempts of managers had a detrimental effect on the wellbeing of flight attendants. In particular the new work schedules and the closing of smaller bases and the creation of 'mega-hubs', which effectively created a commuters community of flight attendants who lived hundreds of miles from their work place, seriously eroded employee well-being (Bacharach, Bamberger and Sonnenstuhl, 1996). The situation in which flight attendants were forced made them more susceptible to drug and alcohol abuse. This problem was widely acknowledged in the industry. In the late 1970s a group of flight attendants started lobbying the Association of Flight Attendants (AFA) to press for a union employee assistance programme. The idea behind the programme was that union members would help other union members to cope with their problems without the intervention of management.

Initially, the AFA had wanted to develop a joint programme together with airline management. Considering its pre-deregulated quality logic the AFA thought management would have an interest in the programme. It expected management of airliners to fund the

programme and middle and lower management to take much of the responsibility for carrying out the programme to help troubled flight attendants. This expectation was based on the resources invested by management in maintaining a dedicated and skilled work force, when top management was still acting upon the quality-oriented logic. However, with the adoption of the new cost-oriented logic by top management the union completely misjudged the new situation. The joint programme would not materialize, certainly not in the way the AFA advocated. Management was at best willing to establish a company financed and administered programme in which the sole role of the AFA would be to inform a supervisor or company employee assistance officer about a trouble flight attendants The AFA and labour still had to make sense of the implications of the shift in management's logic.

Bacharach, Bamberger and Sonnenstuhl (1996) note that the subsequent action of the AFA is indicative of the emergence of a new logic of action emphasizing employee well-being among flight attendants. The AFA, unwilling to sacrifice its autonomy, decided to implement the programme on its own. The change in logics at the institutional level among top management and the shift in logics among flight attendants also triggered changes in the logics of action of the managerial level. Under the new cost-oriented logic of top management and the 'employee well-being logic' adopted by the flight attendants, middle and lower managers were prevented from further pursuing their communalistic logics of developing and maintaining a dedicated and skilled work force providing quality services. On the one hand, their traditional goal of creating and maintaining a workforce of dedicated and skilled service providers was inconsistent with top managers' concern with cost reduction. On the other hand, their communalistic means and paternalistic cooperation, was inconsistent with labour's new end of safeguarding member's well being.

In order to reduce the cognitive dissonance experienced by middle and lower managers in the new situation two important steps were taken. First, they managed to theorize their logic as not being inconsistent with top managements' new cost-oriented logic. They rationalized that developing and maintaining a skilled and dedicated work force was actually in the best interests of top management's cost reduction programmes. Towards the flight attendants, middle and lower managers adopted a more balanced, collegial approach of cooperation, instead of the paternalistic style that had dominated previously.

The labour union was willing to accept this new approach as it discovered the limits of its confrontative logic it had developed. Because the employee assistance programme was now completely run within the AFA, peer counsellors noted they lacked the appropriate means to motivate severely troubled flight attendants to seek help. Management could more easily induce troubled flight attendants to seek professional help, because such individual problems could eventually result in disciplinary actions (Bacharach, Bamberger and Sonnenstuhl, 1996).

Although labour and management initially remained cautious in their cooperation in the early years of the Employee Assistance Programme (EAP), they increasingly noticed the benefits of their cooperation. This revealed itself in supervisors becoming more proactively involved in referring troubled flight attendants to the EAP; supervisors and peer counsellors began to view themselves as a team (Bacharach, Bamberger and Sonnenstuhl, 1996). What had happened, the authors argue, is that middle and lower management, unlike top management and the flight attendants, did not abandon its old *'communalistic logic'* but simply rationalized it as being consistent with the newly adopted *'cost-oriented logic'* of top management and the newly *'confrontative logic'* of the flight attendants. Bacharach, Bamberger and Sonnenstuhl (1996) noted that the rationalisation of the middle and lower managers' logic as being consistent with the new logic adopted at the top management level, and the new style of cooperation with the flight attendants was in fact an extension of its communalistic logic. Thus, the middle and lower managers were not readily willing to disband their old logic and associated behavioural patterns.

This took place in a period of intense political conflict between top management and flight attendants and other operational personnel during the early 1980s. The cost-oriented logic of top management and the concomitant deteriorating working conditions of flight attendants had mounted to a clash of logics eventually culminating in strikes. This heightened conflict between labour and top management would increasingly put strain on the cooperative relations between the operational work force and middle and lower management. At the level of middle and lower managers the awareness emerged that its continued rationalisation of its logic as being consistent with the new logics at the top management level and operational level became untenable. This was reinforced by accusations of top management that middle and lower level *"were overstepping their*

bounds", not enforcing the new work rules and increasing the carrier's health care costs (Bacharach, Bamberger and Sonnenstuhl, 1996: 500). Eventually, this led to the collapse of the cooperation between the operational work force and middle and lower level management. Middle and lower level management at this point abandoned their old 'communalistic logic' and adopted a Tayloristic logic of action, which implied rule accountability by means of routinisation and standardisation. This new logic aligned with the logic of action adopted at the top managerial level. "*Rule accountability served the cost-reduction and control-oriented means of the institutional level, while routinisation and standardisation were not inconsistent with the defence-oriented ends of labor*", (Bacharach and Bamberger and Sonnenstuhl, 1996: 501).

Bacharach, Bamberger and Sonnenstuhl (1996: 502-503) summarized their findings as follows: "*When, in response to environmental changes, actors at the institutional (top management, author) level adopt a new logic of action, this logic is likely to be inconsistent with those logics held by actors at the core (operational, author) level of the organization. Reacting to the dissonance created by such inconsistency, actors at the core level will attempt either to rationalize or adapt their old logics to the institutional level's new logic. As we have seen in this paper, after a period of time, the core-level actors' effort to reduce dissonance by rationalizing and adapting their existing logic to the logic of the institutional level may result not in the reduction of dissonance but in the accentuation of inconsistencies and increased dissonance. In this context, the core-level actors may abandon their old rationalizing and adapting strategies and adopt new logics aligned with the institutional level's new logic, thus bringing the hierarchical levels of the organization into alignment.*"

We have paid so much attention to this analysis, because Bacharach, Bamberger and Sonnenstuhl (1996) developed the approach we are pursuing in this study. However, our approach differs in one fundamental aspect. Bacharach, Bamberger and Sonnenstuhl (1996) focused on hierarchical relations between top managers, middle and lower managers and operational employees in an intraorganisational setting. Arguably, this makes it easier to facilitate alignment, because of the coercive capacities of top management toward lower level management and the operational level. In interorganisational relations between two or more autonomous organisational entities, coercion is often considered to be less likely to occur, unless there is a substantial degree of resource dependence between two

organisations (Pfeffer and Salancik, 1978). Nonetheless, despite absent coercive power, a certain alignment of interests and preferences needs to be assured in interfirm or multiple agent cooperation; it cannot survive without (Grandori, 1997; Child and Rodrigues, 2003). Before we continue to develop our conceptual model, we will first draw on some of the relevant literature on interorganisational relationships. Although, it has been at least implicit in our argument thus far, we will elaborate in the following paragraph on our conceptualisation of interorganisational relations as occasions of structural overlap (Thorton and Ocasio, 2008).

The last couple of decades witnessed a significant increase in the various modes in which Western economies are being managed. The dichotomy between hierarchical and market governance diminished, and an increase in hybrids could be observed (Bradach, 1997; Bradach and Eccles, 1989). Powell (1990) even went as far to suggest that conceptualizing alliances and networks as hybrids, is misleading, and that they actually constitute a distinct organisational form. Increasingly, different types of organisations, public and private, profit and non-profit, turned to cooperative interorganisational relationships (IOR) for a wide variety of motivations, such as risk sharing, securing resources, in particular, skills, and knowledge (Powell, 1987). Simultaneously, scholarly work on and interest in alliances and networks has increased considerably (Smith, Carroll, and Ashford, 1995). Khanna (1998) suggests that probably there is no other research topic that has received so much attention in the organisational literature.

Research so far has commonly adopted a resource dependence (Pfeffer and Salancik, 1978), a transaction cost economics (Williamson, 1981), or a resource-based perspective (Rumelt, 1978). It was primarily focused on the conditions leading to the initiation of cooperative interorganisational relationships. It is not our intention to review the complete literature on interorganisational relations here. Such an endeavour would be way beyond the scope of this study. We will draw, however, on some perspectives relevant to our own research. In particular, we will draw on perspectives that emphasize the process dynamics of interorganisational relations, which takes institutional and cultural factors into account. Scholars examining cooperative interorganisational relationships suggested that problems and tensions emerge because the actors may have dissimilar backgrounds and belief systems (Sutcliffe and Huber, 1998), and are accustomed to different structures, varying cultures

(Barkema and Vermeulen, 1997 and diverging management styles (Lane and Lubatkin, 1998). In international public-private projects this is even more likely as actors stem from different institutional sectors and national cultures.

Students of international business have explored the effects of institutional and cultural differences on the choice of entry mode for foreign direct investments. Drawing on the work of Hofstede on national cultures, researchers have used concepts such as 'psychic distance' (e.g. O'Grady and Lane, 1996) and 'cultural distance' (e.g. Kogut and Singh, 1988). Others have suggested that this approach may be too abstract to capture the complexity of cross-country societal differences and have offered concepts such as 'institutional differences' (Xu and Shenkar, 2002) and 'institutional idiosyncrasies' (Henisz, 2003).

These studies suggest that cultural and institutional differences between parties in an interorganisational relationship significantly increase transaction costs. Orr and Scott (2008) have provided empirical evidence for this observation. They studied 23 cases in which a foreign entrant teamed up with host country-company and noted that in all 23 cases the entrant displayed '*institutional ignorance'* as result of unfamiliarity with host countries' institutions. In all cases they noted a sequence in which an entrant entered a project institutionally ignorant, acts in a way that is deviant from local institutions, which then results in disapproval and additional costs originating from the host (Orr and Scott, 2008: 571).

Ham and Mowery (1998) provided evidence that cross-sector interorganisational relationships are often subjected to similar experiences. They (1998) conducted a comparative case study into five Cooperative Research and Development Agreements (CRADAs) between private firms and a large public research laboratory, the Lawrence Livermore National Laboratory. They noted how different logics between public and private actors in all of their cases led to tensions in the projects. Many of the public project officers from the Lawrence Livermore National Laboratory had years of experience in research on weapons systems. These public project officer generally favoured performance over project costs and schedule, and emphasized the answering of the underling research questions. The private firms involved in the CRADAs, on the other hand, tended to favour fast completion of important project milestones. In depth understanding of the underlying science of technologies was of minor concern to the private firms. Rather they tended to favour the

marketing of the technology as soon as it started to show promise (Ham and Mowery 1998: 667).

We suggest that international public-private networks present occasions conditioned by structural overlap (Thorton and Ocasio, 2008), in which different interests, logics, values and beliefs intermingle and are contested (Kraatz and Moore, 2008; Schneiberg and Clemens, 2006; Stryker 2002; Thorton and Ocasio 2008). Meyer and Rowan (1977) already acknowledged that many organisations and networks face institutionally pluralistic environments. "*Because the ceremonial rules are transmitted by myths that may arise from different parts of the environment, the rules may conflict with one another*" (p.355). Schneiberg and Clemens (2006) urged theorists to examine organisations and networks operating at the boundaries and interstices of organisational fields where actors are often exposed to institutional contradictions and exposure to multiple logics. In the following section we will present a model of the alignment of logics in interorganisational relations. We will do this by drawing on the sense-making perspective proposed by Karl Weick (1969; 1995).

2.6 Alignment of Logics in Networks through Sense-Making

Currently, neo-institutional theory lacks an adequate understanding of micro-institutional dynamics. It has tended to emphasize stability over change and the constraining effects of institutions over their enabling potential. Powell and Colyvas (2008) have also emphasized this arguing, "… *macro-lines of analysis could also profit from a micro-motor. Such a motor would involve theories that attend to enaction, interpretation, translation and meaning. Institutions are sustained, altered and extinguished as they are enacted by individuals in concrete social situations*" (Powell and Colyvas, 2008: 276).

These words indeed point to a closer connection between neo-institutional theory and another influential line of organisational analysis that particularly focuses on the micro-processes of meaning construction. The sense-making perspective developed by Karl Weick (1969) seems particularly relevant for further theorizing. While both Weick's work and neo-institutional theorizing developed at about the same time, both streams of research developed relatively independently of one another (Weber and Glynn, 2006). This is even

more remarkable given that both perspectives share a similar heritage through the work of George Herbert Mead, Erving Goffman and Berger and Luckmann. Interestingly, they have also received remarkably similar criticisms, albeit in an opposite direction. Where neo-institutional theory is often criticized for assuming the existence of too much order and stability in everyday life, the work of Karl Weick is often criticised for the opposite, that it neglects how the wider social context affects sense-making processes in organisations (Weber and Glynn, 2006). The manner in which the larger social context affects sense-making is evident in the work of Pfeffer and Salancik (1978: 63). They argued that in order to understand how the environment affects an organisation attention should be directed towards the ways in which an organisation perceives and represents its environment.

Louis (1980) who studied the socialisation of newcomers in entering unfamiliar organisation defined sense-making as "*… a recurring cycle comprised of a sequence of events occurring over time. The cycle begins as individuals form unconscious and conscious anticipations and assumptions, which serve as predictions about future events. Subsequently, individuals experience events that may be discrepant from predictions. Discrepant events, or surprises, trigger a need for explanation, or post-diction, and correspondingly, for a process through which interpretations of discrepancies are developed. Interpretation, or meaning, is attributed to surprises*" (Louis, 1980: 241).

Hence, sense-making is concerned with the production and reproduction of meaning (Gioia and Chittpetti, 1991; Weick, 1995). Thomas, Clark and Gioia, (1993: 240) argue that sense-making involves *"the reciprocal interaction of information seeking, meaning ascription, and action".* Note that these descriptions of sense-making primarily occur at the individual level. For organisational level phenomena the story becomes more complex. Cultural sense-making activities present a somewhat more complicated story. Only when individuals in organisations share basic assumptions, values and norms one can talk of the existence of a culture. Nevertheless there seems to be little consensus on what this sharing actually implies and the extent to which assumptions and beliefs are shared (Harris, 1994).

Recently, Jeong and Brower (2008) developed a model of sense-making that is particularly well suited for the purpose of this study. They developed a three stage-process model of sense-making consisting of *noticing, interpretation and action*. Noticing involves a *"process in which individuals in organizations indicate to themselves some things in the*

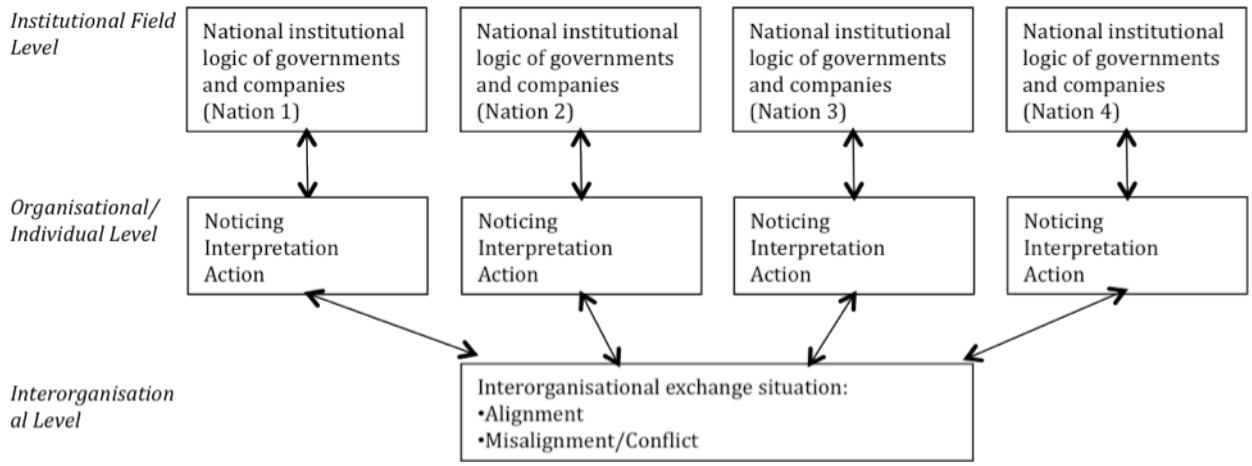
outward situations, and in doing so mentally project their problematic plans of action for those things" (Jeong and Brower, 2008: 228). Interpretation they note *"is a kind of combining process in which the cue is connected to a frame of reference, through which a state of affairs (meaning) of the cue is constructed."* Jeong and Brower, 2008: 230). In addition, they argue that three aspects of action are critical. First, they note that action is directed toward the attainment of future goals (Jeong and Brower, 2008: 232). Second, action is a controlled operation that translates thought into deed (Jeong and Brower, 2008: 232). Third, that action often triggers subsequent noticing and interpretation (Jeong and Brower, 2008: 232). Figure 2.1 contains a schematic representation of our conceptual model.

Literature often tends to portray alignment as a dichotomy; either, interests and preferences are aligned and relationships flourish, or they are not and relationships break down. The model we have presented here may also suggest this. It seems also implicit in the study of Bacharach, Bamberger and Sonnenstuhl (1996), which we have discussed at some length earlier. Maybe such an assumption is justified in the context of hierarchical relationships, where management often exerts a controlling influence upon the logics of their subordinates (Thorton, 2004). However, many social structures do not share the stable properties of hierarchies. Powell and Colyvas (2008: 605) argue that actors in social structures that engage multiple logics *"can use their circumstances to forge new opportunities or craft multivocal identities."*

In settings where numerous logics reflect conflicting or incompatible demands, ambiguous identities and multiple networks offer room to manoeuvre. In many social situations complete alignment is unlikely to occur.

A recent study by Lok (2010) is particularly sensitive to the manner in which a societal shift in logics activate micro-level sense-making activities of firm managers and how these sense-making processes in effect challenged broadly legitimised logics. "*… even highly legitimated logics advocated by powerful change agents are subject to subtle challenges based on the mutability of the identities and practices that underpin them"* (Lok, 2010: 1330). He studied how managers and institutional investors reacted to the diffusion of the shareholder value logic in the U.K.

Figure 2.1 Conceptual framework of the alignment of institutional logics in an international interorganisational network



He noted that: "*Both management and institutional shareholders responded to strong societal pressures for identity and practice transformation based on the new enlightened shareholder value logic by subtly reworking the identities and practices prescribed at the societal level in their everyday talk and activities in ways that preserved a sense of autonomy, as well as a degree of coherence with pre-existing self-identifications and practices*" (Lok, 2010: 1330). In this way they managed to both accommodate the new shareholder value logic as well as resist it.

The sense-making perspective is particular sensitive to this (Maitlis, 2005). Donnellon, Gray and Bougon (1986) noticed that some ambiguity remains in the literature as to how much shared meaning is required for organized action. Donnellon, Gray, and Bougon (1986: 44) argue that what is required for organized action to unfold is equifinal meaning. For them, this means that although interpretations differ between individuals, they may still have the same behavioural implications. "… *organization members may have different reasons for undertaking the action and different interpretations of the action's potential outcomes, but they may nonetheless act in an organized manner*.

Similarly, Maitlis (2005) developed a typology of sense-making processes based on her study of sense making processes between orchestra leaders and stakeholders in which she differentiates between guided, fragmented, restricted, and minimal sense making.

Much prior research on sense-making has been directed towards high uncertainty environments, where there is a tight coupling between behaviours and outcomes, the latter with potentially disastrous results such as coordination on aircraft carriers (Weick and Roberts, 1993), fire fighters (Weick, 1993) and military expeditionary operations (Kramer, 2007). But ordinary life and certainly organisational life presents many occasions in which both individuals and organisations have to make sense of unexpected circumstances.

Note that much research on organisational sense-making deals with how individuals make sense of organizational phenomena. Which is not necessarily the same as how two or more individuals try to achieve a congruent understanding of events and their behavioural implications. Indeed the model of Jeorg and Brower (2008) presents an instance of an individual sense-making process in an organisational context. Relying completely on this model may present a risk that certain elements of multiparty sense-making processes are neglected.

A number of studies have suggested concepts that are useful to study multiparty sense-making processes. Gioia and Chittipetti (1992) distinguished sense-making and sense-giving. Vlaar, van Fenema and Tiwari (2008) in a study of sense-making processes of members of distributed work teams suggested that multiparty sense-making processes consist of communicative acts of sense-giving, sense-demanding and sense-breaking. Sense-giving consists of acts to influence the way others think and act and concerns activities by which stakeholders frame and disseminate their visions and beliefs to others (Vlaar, Van Fenema and Tiwari, 2008: 242). Sense-demanding is a communicative act in which individuals ask for clarification of their situation (Vlaar, Van Fenema and Tiwari, 2008: 242). Sense-breaking involves the questioning of others reasoning and understandings causing them to experience their views of reality as incoherent, insensible, and untenable (Vlaar, Van Fenema and Tiwari, 2008: 243).

A more political view of sense-making has been pursued recently by scholars studying post-merger integration processes (Kroon, 2010, Vaara, 2003, Vaara and Monin, 2010). Vaara (2003) conceives of sense-making as a conceptual framework through which one can view decision-making as contextual processes which are characterised by uncertainty and ambiguity, and involve a great deal of political tensions (Vaara, 2003:862). Sense-making is viewed as a dialectical process in which tensions emerge out of the discursive practices of

participants, which can be motivated by the desire to achieve congruent actionable understandings (e.g. sense-giving or sense-demanding), but also the opposite suggested by the notion of sense-hiding. In this sense, sense-making and its dialogical underpinnings can be seen as what Lindblom (1959) has called the *'science of muddling through'.* With this he tried to outline a different form of decision-making that does not follow the patterns outlined by formal-rational decision-making models.

The conceptual model we propose as the starting point for our analysis is predicated on the idea that interorganisational sense-making efforts contain a process in which actors recognise some problematic situation in dealing with one or more of their partners (noticing). Interpreting this problematic situation involves elaborating upon the specifics of this situation. Yet, as Jeorg and Brower (2008) suggest this interpretation is formed in light of pre-existing cognitive frameworks. Institutional logics provide for these pre-established cognitive frameworks. Institutional logics comprise the means-end frames through which problematic situations are analysed and responded to. Given that human beings are only boundedly rational (Simon, 1978) and often time for elaborate search processes is lacking, logics serve as heuristic devices that filter cues from the environment. They structure decision makers' attention (Thornton and Ocasio, 1999 Thornton, 2004).

In this sense, logics structure the noticing and interpretation processes of the organisational actors. It refers to the cultural dimension of misalignment denoted by Stokes and Hewitt (1976: 843), which *'revolves around the fact that problematic situations often involve misalignment between the actual or intended acts of participants and cultural ideals, expectations, beliefs, knowledge and the like. "Alignment" in this sense has to do with perceived discrepancies between what is actually taking place in a given situation and what is thought to be typical, normatively expected, probable, desirable or, in other respects, more in accord with what is culturally normal.* In our context, there is an additional difficulty. That is that partners will assess other actor's action in terms of their own cultural repertoire. But from the vantage point of another participant that same action may entirely be consistent with the cultural repertoire of that participant. Nevertheless, sustained interaction and hence the concomitant sense-making processes are likely to reduce these 'biased' perspectives as actors will become more aware of their cultural differences, and how they affect perceptions and judgments.

This concludes our theoretical journey. It started with the origins of institutional thinking in various disciplines. Via the emergence of neo-institutional theorizing in the sociology of organisations and the discussion of institutional logics, particularly national institutional logics, the journey went on to study the phenomenon of aligning institutional logics in hierarchies as well as in interorganisational relations. We have conceptualised alignment as a sense-making process involving noticing, interpretation and action.

Our basic theoretical position is that institutional logics provide for the underlying cognitive and symbolic structures through which events are rendered meaningful. In other words, institutional logics inform the noticing, interpretation and action processes of agents. At the same time, in pluralistic cultural and institutional settings these noticing, interpretation and action processes may also reveal a form of ignorance in which actors become aware of differences in their institutional logic. This in turn may trigger activities to reduce this ignorance.

CHAPTER 3 NATIONAL INSTITUTIONAL LOGICS IN DEFENCE INDUSTRIAL POLITICS

This chapter is dedicated to a description of the four founding nations of the NH 90 programme (i.e. France, Germany, Italy and the Netherlands) based on literature about their history, institutions, politics and economics. This description aims to provide important background information as this thesis revolves around differences in institutional logics of these countries and the manner in which programme actors from these countries seek to align their national institutional logics. For each country we will briefly sketch its business climate, managerial practices, and industrial policies, after which we will focus on the role of the defence industry therein.

3.1 France

For many centuries France has played an important role in European and world politics. Its history and traditions seem reflected in a strong national, state-based orientation that seems be a primary trait of the French nation. Although many authors have traced the French concept of 'grandeur' back to the seventeenth century, under the reign of Louis XIV (e.g. Cerny, 1980), or the nineteenth century in the Napoleontic era, it would show its twentieth century qualities under the leadership of General de Gaulle. But French – as well as other nations' - idiosyncrasies may go a bit deeper than the listing of historical events and developments can clarify.

Anthropologist Mary Douglas (1986) argued that both France and the United States developed logics based on natural analogies. She maintained that in the U.S. the analogy referred to natural selection processes spurring the survival of the fittest. The adopted logic of progress was that market selection effects economic rationality, which in the aggregate results in growth. In France, on the contrary, the analogy was made to a biological system, only functioning properly when all parts are coordinated by a central entity (the brain), hence ensuring survival and growth. These different logics form the basis for evaluation and

policy making. In the U.S. scheme economic irrationalities are viewed as the outcome of market failures. In France, failures in central coordination would be viewed largely responsible for this outcome.

Burt, Hogarth and Michaud (2000) offer further evidence of differences between American and French business systems. Using network measures they examined the social capital of U.S managers and French managers. Although they found evidence that bridge-relationships offer advantages in both the U.S and France, they also revealed a number of interesting differences that seem to pertain to the analogy described by Douglas (1986). These differences include the wider range of American contacts and the positive emotions that American managers associate with bridge relationships. French managers appear to form less porous cliques and tend to have negative emotions with fulfilling bridge relationships (Burt, Hogarth and Michaud, 2000). These authors note that these differences could at least partially be explained by differences in the educational and professional systems of both countries. In France, top managers generally stem from the elite educational systems, where cliques are formed that are maintained and nurtured throughout managers' professional careers. This is different for top managers in the United States, who lack this kind of educational background (Burt, Hogarth and Michaud, 2000).

Dobbin (1992) pursuits Douglas' ideas further in an analysis of the American and French electronics policies. After WWII semiconductor chips became viewed in both countries as having important industrial and military applications. But consistent with the different natural analogies adopted, policy mechanisms and outcomes were very different. As Dobbin (1992: 197) phrased it: *"Where the Americans outlawed mergers, the French brokered them. Where the Americans refused to favor particular firms in their procurement procedures, the French designated "national champions". Where the Americans sought to stimulate competition and market entry, the French sought to eliminate both. Where the Americans made agreements to make product competition illegal, the French encouraged it."*

After the Second World War the French state assumed a strong centralized role in governing the economy (Dormois, 1999). Its primary aim was to transform France from a largely agricultural society to an industrialized one (Prasad, 2005). Its industrial policy throughout the post-war period has particularly been favourable to business (Prasad, 2005). After the war it nationalized a great deal of its key industries (table 3.1) and a Planning

Commission was established with the goal of directing economic growth (Prasad, 2005: 388). De Gaulle's strategy involved creating 'national champions' capable of surviving in an international competitive arena (Prasad, 2005). Table 3.1 shows that the large majority of industrial production in France in the second half of the 20th century belonged to the state. But, like elsewhere, times are changing, at least to a certain degree, as we will see later.

Table 3.1 Share of state-owned enterprises in French industrial output, 1962

Natural Gas	100%
Electricity	100%
Tobacco, matches	100%
Miscellaneous minerals	65%
Military goods	62%
Aircraft	47%
Vehicles	40%
Health services	37%

Source: Dormois (1999: 78)

Defence Industrial Policies

Jean-Baptiste Colbert, who was a finance minister under Louis XIV, laid down the French approach to defence procurement that inspired French defence industrial policies for much of the 19th and 20th century and which again was revived under the presidency of General de Gaulle (Cobble, 2004). Colbert was the Prime Minister under Louis XIV from 1670 to 1680. His defence economic policies set the intellectual foundation of what is now regarded as Colbertism: a mercantilist defence procurement strategy intended to create a strong home-based production structure. While this policy could establish an ostensibly self-sufficient arms industry, its principal objective was economic: import substitution and export promotion. In this model, military needs, such as security of supply, were less important than the larger economic effort of expanding domestic industrial production and the

creation of favourable trade balances. This was done within a closed defence market composed of state arsenals and state-subsidized private-owned monopolies.

General De Gaulle, who became the first president of the Fifth Republic in 1958, left a deep imprint on French defence industrial policy in the decades to follow. Key elements of his policy included diplomatic and military independence through national nuclear deterrence means, a special status in NATO, and an exceptionally high level of national self-reliance in the development and acquisition of weapons and other types of military equipment (Yost, 1994: 237). Under the Fifth Plan (1966-1970) a number of industrial sectors were defined as being important to French industrial development. Within these sectors the government tried to create national champions capable of competing internationally. Initially the selected sectors would receive public orders, huge operating subsidies, preferential tariffs, and public R&D financing, before being allowed to compete internationally (Dormois, 1999: 85). Especially, the nuclear and aeronautics industries received enormous amounts of governmental support (Dormois, 1999).

The legacy of De Gaulle's policy is reflected in a strong preference to conduct national defence equipment programmes (table 3.2). In the period 1995-1997 approximately 80% of its defence equipment programmes were national programmes. In Europe, this level of conducting national programmes has only been equalled by the United Kingdom (Heuninckx, 2008). In contrast, of Germany's procurement programmes during 1995-1997, only an estimated 10% were exclusively national. For Italy, the proportion of national programmes is approximately 30%. As an example, the desire to maintain domestic design and development capabilities has also been an argument in France's decision to develop its own fighter aircraft (the Dassault Rafale) instead of participating in the multinational Eurofighter Typhoon programme. Currently, France is the only European country that has embarked upon such an endeavour. Germany, on the contrary, collaborates with Italy, Spain, and the United Kingdom in the Eurofighter Typhoon programme. Italy and the United Kingdom also cooperate together with the United States on the Joint Strike Fighter programme. The Netherlands has joined the Joint Strike Fighter programme.

Table 3.2 Proportion of type of defence procurement, 1995-1997

Country	Exclusively national programmes	Collaborative programmes	Imported equipment
France	81%	15%	4%
Germany	10%	75%	15%
Italy	30%	50%	20%
Netherlands	N.A.	N.A.	N.A.

Source: EU Institute for Security Studies (in Heunickx, 2008: 128).

Under the leadership and policy of General De Gaulle, the French Délégation Générale pour l'Armenent (DGA) emerged as the most important instrument of intervention by the government in the French industry (Mampauy, 2001). In 1961, the DGA received its mission, which it has retained ever since (Mampauy, 2001). This mission contains the following goals:

- to develop and implement programs for the research, design and production of arms (and later maintenance, repairs of an industrial nature and modernisations);
- to exercise supervision of the state-run establishments and national companies and to regulate the private companies involved in armament programmes;
- to ensure the organisation and monitoring of the arms programmes implemented in collaboration with foreign countries; and
- to promote arms exports and ensure their regulation, within the context of the policy defined by the government.

In 1975, 65% of public research and development went to aerospace, 24% to electronics, and 6% to office equipment (Dormois, 1999: 89). The importance of military research and development is clear from the distribution of the research and development grants awarded by public agencies. Two thirds of the grants were under the supervision of the Ministry of Defence, twenty-five percent by the Ministry of Industry, and 7% by the telecom agency PTT.

In the 1980s, the resources made available to the French Ministry of Defence for research and development and the procurement of weapons combined with the persistent

weakness of the Ministry of Industry gave a prominent role to the French DGA in French industrial policy (Chesnais, 1993).

Compared to other European defence materiel organisations and the United States Pentagon, the DGA has more power to manage and control the national defence industry (Mampauy, 2001; Serfati, 2000). Aside from weapons procurement the DGA operates a substantial research and development budget and runs a network of public arsenals (Mampauy, 2001).

In order to sustain a relatively large and self-sufficient defence industrial base France has relied extensively on the export of military equipment. As the mission statement of the DGA suggests, the promotion of exports is an integral part of the mission of the DGA to promote and assist the export of defence equipment. In France, exports have traditionally been viewed as an important tool in sustaining independent domestic defence industrial capabilities. In the mid 1980s, for example, export sales accounted for approximately 40% of total sales in France (Flamm, 2000). Yet, French industrial ambitions reached their limits in the 1980s as government budget deficits skyrocketed. Between 1980 and 1985 the budget deficit jumped from 30 to 153 billion FF to reach 350 billion in 1992 (Dormois, 1999: 91).

In the early 1990s, almost 80% of the French defence industry was either directly or indirectly owned by the state in the form of government-owned and operated arsenals, nationalized companies or firms in which the government owned a large share of the stock (U.S. Congress, Office of Technology Assessment, 1992: 7). Similar to developments in other western countries in the 1980s, the French government pressed for the formation of 'national champions' in the defence industry and related strategic civilian sectors (aircraft, electronics, satellites etc.). For example, Dassault became the main contractor for fighter aircraft, Aerospatiale for helicopters and ballistic missiles and Thomson CSF (currently Thales) for electronics. The desire to maintain domestic capabilities in the full range of military capabilities, and the reliance on national champions for its major weapons systems has led the DGA to adopt administrative controls on price and quality. At the same time it cooperates with industry to maintain profits, employment, and investment in new technologies to maintain the international competitiveness of France (U.S. Congress, Office of Technology Assessment, 1992: 7).

According to Fourcade-Gourinchas and Babb (2002) France underwent a number of neo-liberal changes in the form of privatisation of public owned companies, liberalisation of the banking sector and the establishing central bank independence during 1986 and 1993. Yet, unlike other countries in which neo-liberalism was embraced domestically (e.g. the United Kingdom), France liberalisation policies were mainly a response to external pressures in particular from European integration (Fourcade-Gourinchas and Babb, 2002). The neo-liberal reforms that have taken place in France were less ideologically driven and were less radical than in the United States and the United Kingdom (Fourcade-Gourinchas and Babb, 2002; Prasad, 2005). In France a 'pragmatic neo-liberalism' emerged (Fourcade-Gourinchas and Babb, 2002).

Although the French industrial system has undergone import changes in the last couple of decades in the form of the privatisation of some of its major companies, including Eurocopter France, the central wheel in the French defence industrial system has remained the DGA (*Délégation Générale pour l'Armement*). Serfati (2000) has described the French defence industrial system as a central element – a mesosystem - in the French overall national system of innovation. Although, the French government has been actively pursuing a policy of privatisation, the basic features of this mesosystem have been highly resilient and have not changed much. The tight relations between French defence companies and the DGA remain. Some authors have suggested that the 'pantouflage' phenomenon is also partially responsible for the reluctance in French government to expose French industry to full market forces and international competition (Dormois, 1999; Serfati 2000). This phenomenon refers to high-level civil servants obtaining work in private enterprises (and vice versa), which is a sort of 'revolving door'-principle that not many Western countries know. It underlines the strong interconnections in France – a sort of osmosis - between the state and large industries, particularly the defence industry.

Of the nations in the NH 90 programme, France is highly committed to European collaboration. Yet, its European commitment is also partially a consequence of its uneasy relationship with the United States concerning defence industrial collaboration (James, 2002). Since, the 1970s it has cooperated on a number of programmes in particular with Germany. For France, these early cooperative efforts with Germany were an effort to gain some control after Germany was allowed to rearmament itself (Lorell, 1980).

In France, the role of the parliament in defence procurement is limited. Its involvement has been restricted to approving the military programme-laws, which define goals for procurement during a multi-year period offering general estimates of the probable costs (Yost, 1994: 252). Hence, the DGA exercises considerable latitude in individual programme management.

3.2 Germany

Germany is a fairly young nation: it was founded as late as 1871. Since then, it has undergone turbulent times that lasted until the middle of the previous century. Economically and socially Germany has faired remarkably well after its destruction during the Second World War. Brodbeck and Frese, (2007: 166) suggested that this may be attributed to German cultural values, in particular a high level of performance orientation and assertiveness combined with low interpersonal compassion at work, which combination contributes to a work environment, in which task conflict plays an important role. Task conflict, unlike relational or interpersonal conflict, is often suggested to be beneficial to high performance and quality (Brodbeck and Frese, 2007).

Consistent with these cultural values is the tendency towards what Gannon and Pillai (2009) indicate as compartmentalisation in the German society: the importance of keeping distance between people as well as between and in organisations. This compartmentalisation is clearly reflected in a 'penchant for formality' (Gannon and Pillai, 2009: 187). This compartmentalisation is also visible in German business, in which respect for status and power is highly valued. It is also evident in information exchange between departments in German organisations, which is more difficult than in the United Stated for example (Gannon and Pillai, 2009).

In Germany a preference for a markedly different leadership culture has emerged after the war. This leadership culture comprises the attributes of integrity, performance orientation, vision, administrative competence and team integration (Brodbeck and Frese, 2007: 177). This leadership style tends to downplay the role of leader's impact. Although a number of alternative explanations exist, its Nazi history appears to play a role here.

Brodbeck and Frese (2007) note the existence of a wariness of visionary leadership in German contemporary culture, which they attribute to a "… deep fear and constant suspicion in Germany that a visionary leader may turn out to be a dark charismatic" (2007: 177).

Within NATO Germany is often criticised for a lack of interest in military preparedness and a low level of involvement in European military matters (Gannon and Pillai (2009: 181). Because of its Nazi history, a great deal of opposition to participation in military operations exists among the German population (Gannon and Pillai, 2009). How its precarious and sensitive past still affects current political affairs can be seen in the resignation of the German President Horst Köhler on May 31st, 2010. During a visit to German troops in Afghanistan on May 22nd Köhler told a radio reporter who accompanied him on his trip: "*A country of our size, with its focus on exports and thus reliance on foreign trade, must be aware that ... military deployments are necessary in an emergency to protect our interests -- for example when it comes to trade routes, for example when it comes to preventing regional instabilities that could negatively influence our trade, jobs and incomes*." Apparently justifying German involvement in armed conflicts for the sake of the protection of German economic interests, he was intensely criticised for his remarks (Der Spiegel, 2010). A weak later he resigned.

Defence industrial policy

Industrial policy has been a much-debated issue in Germany. Feldenkirchen (1999) suggests that the debate on concepts and effects of industrial policy were even more important than its actual implementation. The basic question that begged an answer in German politics has been whether the state should control structural changes in the economy, or whether it should try to eliminate barriers to the operation of market forces (Feldenkirchen, 1999: 101). Feldenkirchen (1999: 102) suggests that between 1871 and 1990 industrial policies fluctuated between these poles. Yet, both have never been implemented to their full ramifications.

In the 1960s and 1970s, government policy was aimed at diminishing the technological gap between Germany and other countries and stimulating innovation. In the early 1990s the microelectronics and aerospace industries became a focal recipient of direct and indirect support (Feldenkirchen, 1999).

After the Second World War the Federal Government of Germany was subdued to strong restrictions on the development and production of defence equipment. Until the 1970s, when these restrictions were lessened it relied extensively on foreign suppliers for the equipment of its armed forces (Kelleher and Fisher, 1994). With the abolishment of these restrictions it continued to rely heavily on foreign contractors for its defence equipment, while at the same time it would utilize national civilian companies with comparable civilian technological capabilities (Kausal et al. 1999). Consequently, German firms operating in the defence sector have a substantial amount of commercial activities, lessening their dependence upon defence orders (Kausal et al. 1999; Hanel, 2003).

Most of the German Aerospace companies were integrated into DASA (DaimlerBenz Aerospace AG), which became Germany's national aerospace champion. Since 2000 when DASA merged with Aerospatiale-Matra from France and CASA from Spain to form the EADS (European Aerospace, Defence and Space Company), most of its aerospace and defence industry was integrated into European structures. Daimler continues to control 22.5 % of the shares of EADS.

The integration of its aerospace industry into wider European structures was partially a means to secure basic national defence industrial capabilities deemed necessary for its security. This had become unavoidable as military procurement funds dropped by 21.2% between 1990 and 2003. The total number of employees in the defence sector declined from 280.000 in 1990 to 50.000 in 2003 (Hanel, 2003). Aerospace related defence industry employment accounted for approximately half of these 50.000 jobs. EADS is currently the sole industrial prime contractor responsible for most of the aerospace equipment programmes of the German armed forces. Next to the NH 90 programme, it carries out the industrial work related to the Eurofighter Typhoon programme, the Tiger Attack helicopter and the A400M transport aircraft. These programmes play a major role in maintaining industrial capabilities and technological competitiveness of the aerospace industry (Hanel, 2003).

Germany has a relatively restricted export policy with respect to military equipment, which underlines once again Germany's restrained military orientation since the end of the Second World War. This policy has been codified in the *Politische Grundsätze der Bundesregierung für den Export von Kriegswaffen und sonstigen Rüstungsgütern* (Political

Principles of the Federal Government of Germany for the Export of War Weapons and Defence Equipment, Bundesregierung, 2000). These principles apply to countries that are not members of the EU and NATO. Export to European and NATO countries is in principle not restricted.

Given that its defence industry is privately owned and less dependent upon government support because of the companies' substantial amount of commercial business, it has adopted a more arm's-length relationship with its main suppliers. In Germany, defence procurement is subdued to stricter parliamentary oversight compared to France and Italy. Besides the general evaluation of the equipment requirements and budget, it also must approve of all large contracts worth over 25M Euro (Kausal et al. 1999). In Germany, programmes are managed by the Bundesambt für Wehrtechnik und Beschaffung (BWB). It was established over 50 years ago to serve as a central interface between the armed forces and industry (Kausal et al. 1999). Unlike most other procurement agencies (including its NH 90 programme counterparts), the BWB is a civilian organisation. Although it is under the control of the German Ministry of Defence, the BWB operates independently, which again is a response to Germany's dramatic military past (Kausal et al. 1999).

3.3 Italy

Like Germany, Italy has emerged as a nation state relatively late, in 1861. After the fall of the Roman Empire Italy has been conquered by many foreign invaders, such as Germanic tribes, Normans, and Byzantines. Until 1861, the area of what is now Italy consisted of numerous small kingdoms and city-states. This decentralized past has probably led to Italy's current socio-economic structure, particularly in the North, in which there is strong dynamic interaction and collaboration at the regional level among firms (producers, suppliers, subcontractors), as well as with political and labour market institutions (Brusco, 1982). This undoubtedly reflects an entrepreneurial decentralized, collaborative way of working and negotiating. At the same time a central firm with a leadership function (e.g., Benetton) often coordinates the many economic activities in a sector or region (e.g., Grandori, 1997).

Inside Italian organisations, the large power distance found in Italian culture seems to have its effect on Italian management style. Gannon and Pillai (2009) note that there is little

delegation of authority or effective communication between the different levels of management in most Italian firms. Employees are rarely involved in decisions affecting the company or their own work. At the same time, Italians generally want to make a nice and good impression when interacting with others (Gannon and Pillai, 2009: 351-372; see also Hofstede, 2001).

Defence industrial policy

In Italy public enterprises have played an important role in scale-intensive and high tech industries. During the 1960s and 1970s they served to maintain an industrial capability in sectors such as electronics and aerospace (Malerba, 1993). Italian military demand - with few relevant exceptions - has been generally less technological progressive, smaller, and more open to imports than military demand in other European countries. In 1986, Italian expenditures on military equipment amounted to $2500 million, versus $7100 million in the United Kingdom, and $4400 million in the Federal Republic of Germany. It must be noted that 21.5% of the Italian military demand was satisfied by imports (Nones, 1988). Some cases of successful development exist, however. They are in most cases linked to participation in international programs such as Alenia in the Tornado fighter plane and Agusta in helicopters (Malerba, 1993: 247).

In the 1930s, the state had nationalized a number of important Italian banks including their industrial participations preventing them from bankruptcy (Malerba, 1993). These came under the control of the IRI (Istituto per la Ricostruzione Industriale). This was remarkable since IRI had originally been intended to serve as a temporary organisation (Federico and Giannetti, 1999). During the 1950s and 1960s the success of these public sector organisations – the IRI and ENI (Ente Nazionale Idrocarburi) - led to the development of a strong conviction that public organisations would spur modernisation and balanced growth in Italy (Martinelli, 1981).

It would last until the mid 1990s when IRI was partially privatized in Finmecanicca. Finmeccanica was established in 1948 as a sub holding of IRI. Following an internal IRI restructuring in 1989, STET electronic enterprises came under the control of Finmeccanica. Its aerospace activities consolidated in Alenia, after the merger of Aeritalia and Selenia. In 1992, it also received control over a number of other aerospace and defence companies that

were previously under control of EFIM (Ente Finanziamento Industrie Meccaniche). EFIM, another state holding organisation, which had been set up in 1962, had ran into serious financial difficulties in the 1980s and was forced to wound up in 1992. In 1993, the Italian government partially privatised Finmeccanica. Currently, Finmeccanica is the second largest industrial group in Italy, after Fiat. Finmeccanica develops and manufactures helicopters, military aircraft, defence systems, satellites, power plants, automation equipment, and rail systems. 65 per cent of its revenues come from aeronautics, helicopters, defence and space, and the company is in the top 20 defence contractors worldwide by sales revenue. (James, 2002: 142). The Italian government has encouraged Finmeccanica to enter into joint ventures as a way of ensuring that capabilities and ownership are retained in Italy (James, 2002: 126).

Like in France, the Italian government has pursued a policy of privatisation including Finmeccanica (the mother company of NH 90 programme partner AgustaWestland). However, it continues to retain at least 30% of the shares of Finmeccanica.

3.4 The Netherlands

Van Iterson (2000) has examined the development of the 'rules of action' in Dutch work organisations. He describes the Dutch national business system as a mixture of the Anglo-Saxon and Germanic systems (Van Iterson, 2000: 176-177). Seemingly paradoxical it combines short-termism and long-termism, shareholder value and stakeholder value, and social isolation and social embeddedness (Van Iterson, 2000: 177). The Dutch rules of action emphasize the three C's of consultation, consensus, and compromise. These rules of actions have developed from the thirteenth to the seventeenth century and still have currency in the present.

They have their roots in the specific way, in which the government of the Netherlands has been established and the strong presence of The Netherlands in international trade since the seventeenth century. The roots of these rules of actions have been traced back to the emergence of the 'Waterschappen' (local polder boards) in the thirteenth century. In principal, volunteering farmers sat on the boards of the polders to protect them from flooding. They were private initiatives without any central government

involvement. These polder boards are regarded as one of the foundations of the Dutch rules of action of seeking consensus and building coalitions (Van Iterson, 2000: 178).

French sociologist Philippe D'Iribarne (1998) captured the Dutch principle underlying Dutch social interrelationships as a 'logic of consensus'. This preoccupation with consensus – and avoidance of conflicts - has a number of characteristics. The first one is a strong concern for facts and objectivity. People in the Netherlands display a genuine willingness to be persuaded by arguments that are based on objective facts. This also extends towards working relations. A second characteristic concerns the egalitarian nature of interpersonal relations both between individuals in society as well as in organisations. Status differences between individuals tend to be downplayed. The use of sanctions and repression when mistakes have been made tends to be fiercely resisted. Rather individuals demand an explanation in order to understand their mistakes (D'Iribarne, 1998).

D'Iribarne (1998: 248) summarized it as follows: *"Everything that tends towards the use of repression, formal or informal, even when someone given his position would be entitled to it, will receive a lot or resistance. There is little room for sanctions… To approach one another, either as equals or superior and subordinate, people will talk and argument, factual data will be collected and thoroughly and objectively assessed, people persuade each other. It is everyone's duty to strive for an agreement and realize earlier made agreements. When new factual data turns up, everyone is free to open up new discussions that lead to a new agreement. And when the with power of argumentation reached situation does not satisfy one of the parties, it would be very inappropriate to either alone or in a group play out once jokers to exert some kind of repression."*

Egalitarianism is an important feature of Dutch culture (Thierry, Den Hartog, Koopman and Wilderom, 2007). Thus, although leaders are expected to satisfy high requirements to qualify for their jobs, they are still expected to behave as a next-door neighbour. They should not behave distinctively and their style of living should be kept a private issue (Thierry, Den Hartog, Koopman and Wilderom (2007: 240). This is also reflected in the attitude of the Dutch press towards the royal family, whose private lives are respected. The egalitarian nature of Dutch culture is also reflected in a general sensitivity towards those in more or less deprived circumstances, the mediocre and poor performers (Thierry, Den Hartog, Koopman and Wilderom, 2007).

The focus on consensus in the Netherlands is also visible in the structure and composition of corporate executive and supervisory boards, the role and accompanied responsibilities of work councils in organisations, the centralized wage and work conditions bargaining that takes place between labour unions and employer associations, and the political system in which governments are always formed by a coalition of political parties (Van Iterson and Olie, 1994).

Defence industrial policy

Notwithstanding a considerable number of large Dutch companies (Philips, Akzo Nobel, Unilever, Shell for example) that have been around for some time, the Netherlands is generally characterized as a late industrialiser. Since its establishment as a nation state in the 16th century (following its independence war from Spain) it emerged as a strong trading nation. In the 17th century it experienced its Golden Era, with footholds in many parts of the world and trade flourishing. Some authors have suggested that in many ways a 'laissez faire'-capitalism emerged that the world has never seen since (Van Zanden, 1998). Companies were founded, in which individual participants could buy shares and the Amsterdam Stock Exchange was created.

Even after its decline in the 18th century international trade remained its primary domain of business. It was only after the Second World War that the Dutch government assumed a stronger centralized role in the economy. This was primarily driven by a need to rebuild the country that had suffered from five years of Nazi occupation. The main features of its economic policy were: a mixed economy (in which governmental control and market forces are the main factors), a consultation economy (which means that major interest groups are frequently consulted about their views), and a substantial welfare state (Thierry, Den Hartog, Koopman and Wilderom, 2007: 223-224).

The Netherlands, relying on an open economy, has traditionally been committed to a relatively liberal industrial policy. This tradition dates back to the sixteenth century, when the Netherlands was created (Van Zanden, 1999). Yet, in the 1970s and 1980s it has experimented with a more interventionist industrial policy (Van Zanden, 1999). A number of economic shocks in the 1970s were mitigated by generous industrial policies, which gave an impulse to declining industries, among which industries operating in the defence sector (Van

Zanden, 1998). However, in the early 1980s the financial situation of the state had deteriorated to such an extent that drastic budget cuts were inevitable. The government ended all kinds of subsides to ailing industries and shifted to a more 'offensive' policy towards the promotion of technological change and stimulation of growth industries (Van Zanden, 1998: 172). This change was speeded by the discovery that RSV (a huge combination of ship building and metalworking firms), which had received a large part of the subsidies for industrial policy was virtually bankrupt. Subsequently, this led a large public scandal and a parliamentary inquiry into the allocation of subsidies (Van Zanden, 1998: 172).

Another part of its new policy orientation was aimed at privatisation. Yet, this policy change was not radically different from earlier own. Already in the 1960s the government had sold large parts of its shares in well performing industries. In the 1980s it transformed state enterprises (the postal service and bank for example) into state controlled firms, and in subsequent years it sold its shares in tranches to achieve complete privatisation. But given the small share of the government owned sector in the economy, the impact of this policy remained relatively small (Van Zanden, 1998: 172).

The Netherlands never really developed a large defence industry. A number of companies such as Fokker, DAF, Volvo, Philips, Hollandse Signaal and a few shipyards were active in the defence sector and received large orders. Yet, for the most part these companies were active in the civil market. In the aerospace sector the bulk of defence orders went to Fokker. Yet, in the 1970s and 1980s Fokker ran into serious financial troubles. In 1987, the Dutch government saved the company from bankruptcy by providing a loan, under the condition that it sought a strong partner. Initially, a deal with DASA saved the company. But a few years later when a disagreement between the Dutch government and DASA emerged over the financing of Fokker, the deal collapsed. Van Zanden (1999: 189-190) noted that *"before 1995 new subsidies were given again and again because the 'national champion' Fokker was regarded a 'leading edge company', in which new products and technologies were developed for rapidly growing markets. But this myth has faded, as losses have piled up and detailed studies of the effects of Fokker on the rest of Dutch industry have shown that these were and are quite modest. It was finally closed down in 1996."* After its bankruptcy in 1996 the economically viable parts of Fokker, including the NH 90 programme were transferred to Stork and became Stork-Fokker Aerospace.

This concludes the sketches of the four countries' industrial practices and defence industrial policies – their national institutional logics so to speak. Clearly, the four nations – even though they are all European and more or less neighbouring each other – differ a lot in their manners, approaches and policies. The question now is how these national institutional logics have influenced the evolvement of the NH 90 programme. To this we will turn in the coming three chapters.

CHAPTER 4 RESEARCH METHODOLOGY

4.1 Case Study Research

For this study we have adopted a retrospective qualitative case study design. Any decision for a particular research design involves trade offs in accuracy, simplicity and generalizability (Weick, 1969). We have chosen to lay the focus on accuracy studying one international programme in-depth. The motivation for doing so is that the academic literature provides only limited knowledge of the management of international arms collaboration. Qualitative research is especially suited for examining poorly understood phenomena and dynamics in single settings (Golden-Biddle and Locke, 2007; Eisenhardt, 1989) and highly appropriate for understanding the context and micro-dynamics of institutional processes (Greenwood and Hinings, 1996: 1022). Our case study approach draws heavily upon process research methods. Process methods, unlike variance methods, are primarily concerned with understanding how and why things evolve in a particular way over time (George and Bennet, 2004; Langley, 1999).

4.2 Data Collection

We relied primarily on two types of data: documents at the network and organisational level, and interviews. First, documents we gathered came from a wide variety of sources. Some were provided by our interview respondents, others came from databases and library searches and included the General Memorandum of Understanding (GMOU), production contracts, articles in *Flight International* and *Aviation Week and Space Technology*, research papers, market reports and Dutch parliamentary documents etc.

Second, we have conducted 35 interviews with individuals affiliated to the NH 90 programme these interviews were conducted between May 2007 and June 2009. The interviews were conducted in three rounds of data collection. In the first data collection round we covered the Dutch public side of the NH-90 project. In the second round of data collection, we interviewed staff members from NAHEMA, located in Aix-en-Provence in

France. Respondents include the Vice-President, Division Managers, and Work Group Members. During the third round of data collection interviews were conducted with French, German and Italian NH90 programme officials and with officials from Fokker (see table 4.1 for an overview of the respondents). The selection of respondents basically involved a snowball technique in which we asked respondents near the end of the interview to provide us with names of other persons whom they thought of as being potentially interesting for us to talk to.

We set out to have a representative sample of the individuals working in the different defence ministries and industrial partners. However, we soon discovered that gaining access to a number of organisations in or study proved difficult. With respect to the private side of the programme, the timing of our data collection was unfortunate. At that time, NHI was undergoing a major restructuring process which had been demanded by the participating defence departments in order to gain control over the delays that plagued the programme. This involved a number of personnel changes and contractual renegotiations that required the firms' full attention. Hence, key personnel at NHI, Eurocopter and Agusta were reluctant to talk to us during this restructuring process.

Gaining access to the public organisations in the programme was somewhat easier. Nevertheless, here too we encountered some difficulties, particularly in gaining access to individuals working for the programme offices of France and Italy. First, rather unexpectedly, there was a language barrier. Many of potential respondents from these countries had difficulties expressing themselves clearly in English (as did we in their native languages).

Moreover, for many of the programme representatives travelling constitutes a fair share of their working time. Hence, at any point in time a number of programme officials were not available at the programme offices. In other instances, we got a consent from a programme office, but after calling several times we eventually failed to make an appointment with potential respondents.

The interviews were conducted by at least two and occasionally three interviewers. The interviews were semi-structured. For each interview we relied on an interview protocol containing the main issues and questions to be addressed. We started the interviews with general questions related to the structure of the organisation of which the respondent was a member, and his main tasks and responsibilities. From there we went to the core topics in

which we were primarily interested. These included the interests, goals and motivations to participate in the NH 90 programme, the manner in which decisions were made, conflicts that may have occurred between programme members and how these were resolved, and the overall assessment of the performance of the programme. The interviews ended with us asking whether there were issues related to the NH 90 of which the respondent felt they were

important, but that weren't covered by our earlier questions. We also asked respondents at the end of the interview for additional contacts that could prove valuable for our study.

Table 4.1 List of respondents

Respondent	Organisation	Number	Number of quotes used in text
The Netherlands			
Minister of Defence	Dutch Ministry of Defence	1	1
State Secretary of Defence	Dutch Ministry of Defence	2	2
National Armaments Director	Dutch Defence Material Organisation	1	5
Director Acquisition	Dutch Defence Material Organisation	1	1
Director Weapons Systems	Dutch Defence Material Organisation	1	
Director Projects and Procurement /NH 90 Steering Committee Member	Dutch Defence Material Organisation	1	2
Project Officer Public Private Cooperation	Dutch Defence Material Organisation	1	
NH 90 programme officials	Dutch Defence Material Organisation	5	Official 1: 10 Official 2: 1 Official 3: 1
NAHEMA Officials	NAHEMA	2	Official 1: 5 Official 2: 4
Executive Vice-President STORK	STORK	1	6
Executive Vice-President Fokker Aerospace	STORK	1	4
NH 90 Programme Manager	STORK	1	2
France			
NH 90 programme	French Defence Material	1	3

officials	Organisation		
NAHEMA Officials	NAHEMA	3	Official 1: 5 Official 2: 4 Official 3: 2
Germany			
State Secretary of Defence	German Defence Material Organisation	1	1
Member of Parliament	German Parliament (Bundestag)	1	
Director Division Air/ NH 90 Steering Committee Member	German Defence Material Organisation	1	3
NH 90 programme officials	German Defence Material Organisation	5	Official 1: 3 Official 2: 4 Official 3: 3
NAHEMA Officials	NAHEMA	2	Official 1: 2
Italy			
NH 90 Programme Officials	Italian Defence Material Organisation	3	Official 1: 3 Official 2: 1

4.3 Data Analysis

The aforementioned problems in collecting our data obviously have some implications for the subsequent analysis of our interview data. Probably the single most important implication is that it forced us to rely more heavily on the descriptions provided by the Dutch respondents. One could argue that the illumination of a nation's logic should be based foremost on accounts provided by native respondents. Nevertheless, we still believe that our adopted strategy has its merits. Many of our respondents had some years of experience in working in international environments. Moreover, a number of Dutch respondents and their families had lived in France for a couple of years and as such they were relatively familiar with its culture.

We now turn to the procedures used to analyse our data, which basically involved three different steps. The first step in data analysis involved constructing a narrative of the NH 90 programme. Here the documentary material was particularly helpful because it allowed us to describe the main developments from its inception to its current stage. This allowed us to identify the different programme phases and the main problems and issues

encountered by the actors in the programme. The main data sources for this account of the NH 90 programme are industry news sources Flight International and Aviation Week and Space Technology and Dutch parliamentary documents on the NH 90 programme (see table 4.2 for an overview of the documents that were used). We used 'NH 90' as primary search in the databases of these data sources. For each of the documents we listed the main issues raised, being particularly sensitive to political issues raised in the programme. In chapter 5, we will describe the results of this analysis in detail.

The second step in data analysis involved the identification of the different logics of the four programme partners. For this we relied on common procedures for qualitative data analysis (cf. Strauss and Corbin, 1990; Miles and Huberman, 1994). We engaged in a coding procedure in which labels were assigned to text units (sentences or paragraphs).

In chapter 3, we sketched some general features of the defence industrial production features and general business climate conditions of each of the nations under study. These provided us with a number of categories potentially relevant for our subsequent empirical analysis. Yet, through out the coding procedure we remained sensitive to other issues, conceptions, and events mentioned by respondents that did not fit a code on our initial coding list. Primarily descriptive codes were applied to chunks of text (from sub-sentences, to paragraphs). Examples of codes that we used included: *government-industry relations*, *industrial interests*, *evaluation of cooperation*, *programme management*, *responsibilities*, *and authority relations*.

Table 4.2 Documents studied

Documents studied	**Type**	**Year(s)**	**Number of Articles**
Dutch parliamentary documents	Publicly available	1985-2011	82
Flight International	Industry News	1985-2005	121
Aviation Week and Space Technology	Industry News	1999-2009	48
Memorandum of Understanding	NATO Classified	1991	1 plus amendments
Development and Production Contract	Commercially Confidential	1992	1 plus amendments

We then sought to compare these codes across respondents to see whether we could discern differences between the nations on these codes. Careful comparison of the quotes and iteration between data and theory allowed us to identify two main dimensions (defence industrial orientation and programme management control) on which we observed variation between the four different nations. The results of this analysis are presented in chapter 6.

In the third data analysis step we tried to understand how the process of aligning between the different actors unfolded. Again we engaged in a coding procedure in which we assigned labels to text units. Based on our theoretical framework we applied codes in which actors expressed concern with individual sense-making activities *noticing, interpretation, and action,* as well as the communicative acts of sense making (cf. Vlaar, Van Fenema, and Tiwari, 2008 and Vaara and Monin (2010), *sense-giving, sense-demanding, sense-breaking and sense-hiding* necessary for multiparty negotiations. Additional codes that emerged centred around more structural features of the programme organisation. Codes that were applied were *negotiation process*, *decision-making structure, information exchange* and *lobbying.* During the coding process, we became aware that that these codes referred to two different processes, one lateral between the nations with NAHEMA as the centre and one vertical where representatives of the nations communicated with superiors in their respective procurement agencies. This informed the subsequent development of two main themes (*Coalition formation* describing the lateral one and *escalation* describing the vertical one) upon which we built our analysis further. Proceeding our analysis with these themes made us sensitive to two other themes (the structuring role of the Memoranda of Understanding and the role of NAHEMA or more specifically the role of the representatives of NAHEMA) that did not readily fall within the coalition formation and escalation themes.

4.4 Research Quality

We have to admit that the number of respondents from Italy and France is relatively small. So small, that we have even considered to dismiss these nations from our study. Nonetheless, we also felt that skipping these nations from our study would seriously limit our study's theoretical and empirical value. We also believed it would do injustice to the interviews we did conduct with officials from the programme offices of France and Italy

which provided us with important insights about the programme and the cooperation among the partners.

In order to increase the validity and reliability of this study we have relied on a number of procedures. We have sought to triangulate our data using both documentary sources and interviews with individuals affiliated with the NH 90 programme. For the interviews we have used a structured interview protocol. This protocol was used for each interview we conducted.

Moreover, the interviews were conducted by either two or three interviewers with one interviewer heaving the primary lead, while the other(s) took notes and ensured that all the basic questions in the interview protocol were covered. The first set of interviews was also coded separately by two researchers based on the initial coding list that was constructed. After having coded a transcript the researchers got together to compare the codes that they applied and discuss the codes they applied to chunks of text in cases where these varied.

CHAPTER 5 NH90 CASE DESCRIPTION

This chapter is dedicated to a historical description of the NH 90 programme from its inception in the early 1980s up to the present. The main data sources for this historical description are industry news sources (primarily Aviation Week and Space Technology and Flight International) and Dutch parliamentary documents on the NH 90 programme.

After the Second World War, the build up of the European defence industrial capabilities relied heavily upon support from the United States. From the 13 billion dollars provided under the European Recovery Programme by the United States a large proportion was spent on industries with military importance (Lovering, 2001: 33). Within NATO, armaments collaboration also became an important subject, in particular to achieve interoperability among alliance members, and convergence of doctrines and training. During the 1950s and 1960s most of these collaborative programmes involved the production under license of United States military equipment (Lorell, 1980). Notable examples are the Lockheed F104 Starfighter and its successor, the General Dynamics F16 Fighting Falcon.

France, in particular, has been a strong early advocate of European cooperation in the development and production of weapons systems, somewhat paradoxically with its policy of maintaining a strong and independent military power. French independence in procurement matters dates back to the 17th century (U.S. Congress, Office of Technology Assessment, 1992: 3). But in the immediate aftermath of the war it relied heavily on American developed military equipment. When Charles de Gaulle became president in 1958 this would soon change. He formulated a new defence and security policy for France based on diplomatic and military independence through nuclear deterrence, a special status within NATO and national self-sufficiency in military equipment (Yost, 1994: 237). In practice, this has resulted in the national development and production of its most important weapons systems even when better or cheaper alternatives were available from other countries (including nuclear capabilities). In order to control the unit costs of weapons systems it has tended to rely heavily on exports (U.S Congress, Office of Technology Assessment, 1992; Yost, 1994). The first collaborative development and production programmes were based on Franco-West German bilateral arrangements, and were primarily attempts by the French

government to gain some control over post-war rearmament of the Federal Republic of Germany (Lorell, 1980).

In the following decades, when European nations had managed to build up there defence industrial capabilities, they increasingly became concerned with the "one way street" in which European countries procured American developed military systems (Lovering, 2001). At the same time the United States, despite frequent rhetoric of opening up of a "two way street", remained reluctant to buy equipment from European suppliers. Increasingly, even the larger countries became unsatisfied with this division of labour. European countries struggled to keep their defence industrial capabilities in shape given the rising costs of developing and producing state-of-the-art military equipment. To this end, a number of European nations collaborated in the establishment of the Independent European Programme Group (IEPG), which was founded in 1976 with the aim of achieving a more balanced relationship in the procurement of defence equipment between the United States and Western Europe (Tweede Kamer, 1984: 7).

5.1 Changing Nature of the European Defence Industry

One should be sensitive to the changes that have taken place in the European defence industry. These changes are still continuing in the present. Initially, European governments have tried and at least to some extent succeeded in the consolidation of the European defence industry. European governments basically have pursued a mixture of three different strategies for the consolidation of the defence and aerospace industry[2] in the past. A very clear preference for either of them has yet to emerge.

The first strategy that was pursued by more or less all governments was the creation of "national champions". In Germany, this consolidation took place in the establishment of DASA. In France, Aerospatiale emerged as a national aerospace champion. A further consolidation in France to date has not yet occurred, primarily because the private sector company Dassault Aviation has been able to withstand pressure from the French

[2] We would like to emphasize that we are here primarily talking about the aerospace sector of the defence industry. For naval and land systems the current situation differs dramatically. Although governments there have also sought further consolidation and rationalisation, companies thus far have been able to withstand these attempts of governments.

government to merge with Aerospatiale. In Italy, Finmeccanica emerged as the dominant defence and aerospace industrial group. In the Netherlands the government has tried to integrate the Fokker into DASA, but eventually this attempt failed and Fokker went bankrupt (Van Zanden, 1999). The economically viable parts of Fokker were taken over by Stork. Alongside the creation of these national champions governments the second strategy pursued consisted of negotiation among governments over the specialisation in different defence sectors.

Yet this proved extremely difficult given the divergent interests of the governments involved. Moreover, even if the governments had been able to reconcile their divergent interests as to what capabilities they would like to retain and what capabilities they would allow to be handled by other nations, a second problem would have to be solved. This problem would be to convince their national companies to comply with the wishes of their governments (Fligstein, 2006). Especially in the United Kingdom and in Germany this would have proved difficult given that their defence companies were privately owned. In the previous chapter, we already noted that the Ministry of Defence was not capable of preventing Westland to seek closer cooperation with the American helicopter manufacturer Sikorsky.

A final possible strategy for governments would have been a primarily market driven solution (Fligstein, 2006). Here companies would have been allowed to decide in which sectors to specialize and which companies to buy. Yet, a problem here was that especially the private sector firms in the United Kingdom and Germany were reluctant to seek closer integration with French state-owned companies – despite the efforts of the French government to privatize a large proportion of its defence companies during the 1990s.

What has characterized much of the efforts of both European governments and defence companies has been a mixture of these three approaches. Governments have been reluctant to completely abandon full control of their defence companies. Defence firms, uncertain about what their governments said they wanted them to do and what they would actually allow them to do, have sought greater cooperation and integration. So, what have emerged in the meantime are primarily four large European groups, EADS, Thales, BAe Systems and Finmeccanica. Yet, each of these groups has still managed to preserve much of their original national identities (Serfati, 2001; Fligstein, 2006). And all of these groups have

developed ties to one another through a variety of shareholdings in a number of cross-national joint ventures, which has been described as the 'European spaghetti bowl' of European defence cooperation (Keohane, 2002: 7).

These cross-national joint ventures were formed among a number of different programmes (see table 5.1 for an overview of types and numbers of collaborative programmes). In the civil market, French Aerospatiale and Deutsche Aerospace founded the Airbus programme. Subsequently, Spanish Contrucciones Aeronáuticas SA (CASA) joined the programme in 1971, followed by British Aerospace (BAe) in 1979[3]. A couple of years later, in 1985 the Future European Fighter Aircraft programme (FEFA) was founded by the governments of Germany, Italy, and the United Kingdom. France, originally participated as well, but eventually decided to nationally develop and produce the Dassault Rafale. Similar developments occurred in the helicopter industry with three collaborative programmes (i.e. the NH 90, EH 101, PAH 2 and A 129) launched in the late 1970s and 1980s.

Table 5.1 Collaboration in arms production among western European producers

	1971-75	1976-80	1981-85	1986-90	1991-94
Consortia	8	5	20	22	38
Joint Ventures	1	0	2	8	20
Merger & Acquisitions	0	0	2	36	12
Strategic Alliances	0	0	0	6	10

Source: Brzoska 1998: 87

5.2 The NH 90 Programme

In the 1970s and 1980s the military helicopter industry (and the aerospace industry as a whole) faced difficult times. A large overcapacity existed, especially in Europe, and increasingly both governments and companies were seeking international cooperation as a

[3] Since 2006, Airbus is completely owned by the European Aerospace Defence and Space Company. (EADS) after BAe sold its 20% share in the Airbus programme to EADS.

possible remedy. For most European countries (even the larger ones), the domestic development and production of advanced aircraft was viewed as undesirable given the cost trend in developing and producing aircraft.

In 1979, Agusta (Italy) and Westland (UK) formed European Helicopter Industries (EHI) to develop the EH 101 (since 2007, AW 101) anti-submarine warfare helicopter. Initially, France and Germany were also involved, but they later discovered that they did not have a requirement for such a helicopter (Flight International, 1985: 84).

In 1985, Westland (United Kingdom) and Agusta (Italy) agreed to extend their cooperation to build a naval anti-submarine warfare helicopter, a utility battlefield helicopter and a civilian transport helicopter based on the EH 101 design. They also agreed to develop an upgraded version of the Agusta A 129 Mangusta anti-tank/anti-helicopter aircraft (Flight International, 1985: 83).[4] In May 1985, France and Germany agreed on a Memorandum of Understanding to form the Eurocopter company comprised of Aerospatiale of France and MBB (Messerschmitt-Bölkow-Blohm) of Germany. These governments agreed to build a two-seat attack helicopter (currently known as the Tiger attack helicopter) (Flight International 1985: 83).

In the late 1970s, a number of NATO defence departments identified the need of developing a new maritime helicopter for the NATO frigate of the 1990s. In 1985, the Memorandum of Understanding (MoU) was signed, declaring the intention of the governments of France, Germany, Italy, the Netherlands and the United Kingdom to cooperate on the development and production of new helicopters. The attention soon became focused on a standard helicopter, that foresaw in the development of both a transport (TTH, Tactical Transport Helicopter) and a tactical (NFH, NATO Frigate Helicopter) version. Standardisation between the two versions was believed to reduce production and exploitation costs. In 1986, the feasibility study and the pre-definition phase came to an end. The following year, the UK withdrew from the programme for industrial and operational considerations. The other participating countries were convinced the projected demands

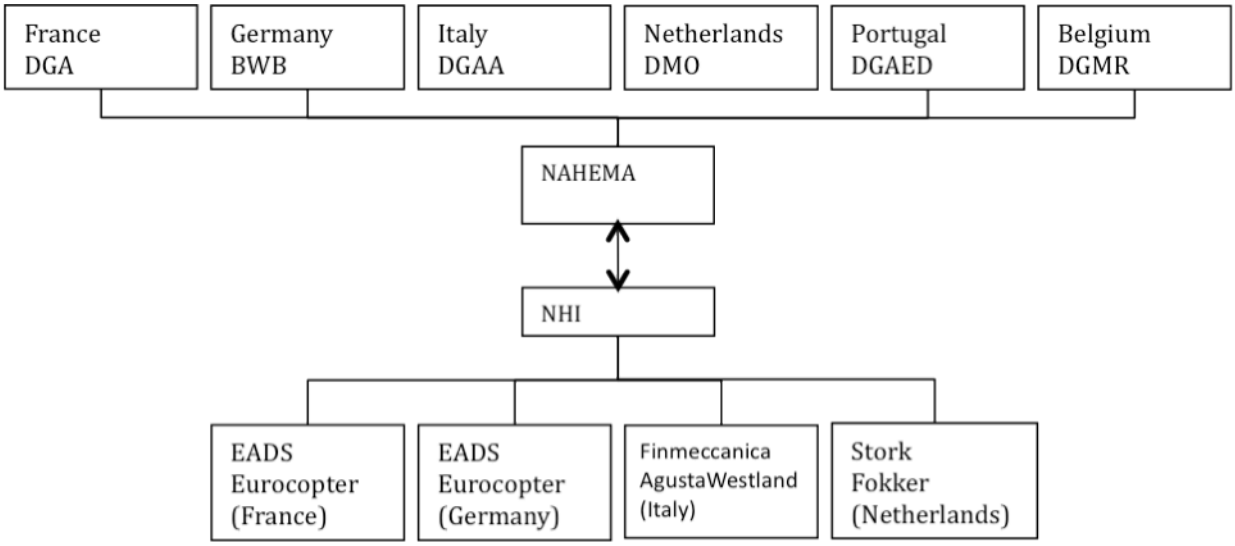
[4] In 1986, a Memorandum of Understanding was signed between the governments of Italy, the Netherlands, Spain and the United Kingdom to investigate an improved version of the A129 Mangusta. The study progressed under the name Joint European Helicopter Tonal. However, the program collapsed in 1990 when both the Netherlands and the United Kingdom decided to procure the American AH-64 Apache. Spain subsequently decided to join the Franco-German Eurocopter Tiger Programme (Tweede Kamer, 1985[a]).

could be satisfied. The multi-role helicopter should be able to fulfil three primary purposes: combating submarines as well as surface ships, and serve as an early warning system for an air strike.

Despite the emergence of two different camps, (i.e. Eurocopter and European Helicopter Industries), the efforts did reveal the willingness of European countries to do something about the overcapacity in the industry. Sustaining four helicopter manufacturers was deemed to be economically unviable. At the same time the aforementioned countries together with the Netherlands signed a Memorandum of Understanding to jointly develop the NH90 (NATO Helicopter for the 1990s). MBB and Aerospatiale agreed to work together under the banner of Eurocopter in the programme. However, at the start of the program there was already some scepticism over the programme. Westland's representative on the NH 90 industrial management committee noted that, "[t]*he history of collaborative programmes suggests that the NH90 in-service date – 1994 – is extremely optimistic… It will take an awful long time to set up* (cited in Flight International, 1985: 85)." Similar views were expressed by the then managing director of Eurocopter, "*It is a good idea to go ahead with the programme, but it is a very difficult way to go with five nations. I don't see it succeeding but if you want it to, you can do it. It depends on how strong the determination is…*" (cited in Flight International, 1985: 86).

The NH 90 programme (see figure 5.3 for a graphical representation) includes four nations: France, Germany, Italy, and The Netherlands. These nations together formed the NATO Helicopter Management Agency (NAHEMA). In 2001, Portugal became member of NAHEMA, followed by Belgium in 2004. The industrial partners, responsible for the design, development, and production of the NH90, were drawn from the participating nations and involved Aerospatiale from France (currently Eurocopter France), Messcherschmitt-Bölkow-Blohm (currently Eurocopter Germany), Agusta from Italy, (currently AgustaWestland) and Fokker from the Netherlands. Eurocopter France and Eurocopter Germany are now wholly owned subsidiaries of the European Aeronautic, Defence, and Space Company (EADS). These four industrial partners have organized themselves in NHIndustries (NHI). NHI serves as the contract partner for the respective industrial partners (see table 5.2 for an overview of the profiles of the companies involved).

Figure 5.1 The NH 90 Programme



We have already discussed some of the basic features of the NH 90 programme. We will detail the programme set up further here. We deem it necessary to provide some more details here, as some additional background information will be useful for the presentation of the research findings. The founding nations – France, Germany, Italy, and the Netherlands together form the NATO Helicopter Management Organisation NAHEMO. The objective was to define, develop, produce and support the NH 90 in order to have the first production helicopters with maximum commonality in operational service with armed forces in 1997.

The overall responsibility for programme matters lies with the NH 90 Steering Committee. The Steering Committee (SC) consists of the Heads of Delegation (HoDs). Under normal circumstances the Steering Committee convenes twice a year. The Steering Committee is assisted by a Joint Executive Committee (JEC). Within the JEC, the NH 90 programme managers from the participating nations take seat. Under normal conditions the JEC convenes about six times a year. The tasks of the JEC include the timely execution of the programme by the NATO Helicopter Management Agency (NAHEMA), the national coordination of the requirements with the armed forces, and the preparation of the decisions of the Steering Committee. Within each of the participating nations there is a dedicated NH 90 programme office within the different defence materiel organisations. The different national programme offices consist of programme officials who take part in the different functional working groups (e.g. engineering, logistics support, training equipment

etc.). Decision making is based on unanimity. The chairmanship of both the JEC and the SC rotates annually among the nations.

Table 5.2 Company Profiles

Company	Profile
Eurocopter France (formerly Aerospatiale)	Aerospatiale emerged as the French aerospace champion in 1970 out of a merger of a number of state-owned companies. In 1992 its helicopter division had been merged with the helicopter division of German DASA. In 1999, the company merged with Matra Haute Technologies to form Aerospatiale-Matra. Under the government of Lionel Jospin the privatisation of Aerospatiale-Matra was initiated pending a further European integration when Aerospatiale-Matra and Contrucciones Aeronáuticas SA (CASA) from Spain merged to form the European Aeronautic Defence and Space Company (EADS). Currently, the French government still controls about 30% of the shares of EADS.
Eurocopter Germany (formerly Messerschmitt-Bölkow-Blohm (MBB))	Messerschmitt-Bölkow-Blohm was a German aerospace company, which resulted from the merger of a number of aerospace companies in the 1960s. In 1989, Daimler-Benz Aerospace AG acquired MBB. (Following the merger of Daimler-Benz and Chrysler in 1995 the company name was changed into Daimler-Chrysler Aerospace AG. The helicopter division of DASA had already been merged with the helicopter division of Aerospatiale from France in 1992 to form Eurocopter. Later in 2000, DASA and Aerospatiale-Matra and Contrucciones Aeronáuticas SA (CASA) from Spain merged to form the European Aeronautic Defence and Space Company (EADS). Eurocopter is now completely owned by EADS.
AgustaWestland (formerly Agusta)	Agusta started helicopter manufacturing in 1952. Initially this was limited to production under licence of U.S. helicopters. But later it started to develop and build its own designs. The company is a subsidiary of the large Italian industrial group Finmeccanica of which the Italian government controls about 30% of the shares. In the early 1990s it teamed up with Westland from the UK to form the European Helicopter Industries. At about the same time it also became involved in the NH 90 programme. In July 2000, Finmeccanica and GKN from the UK agreed to merge their helicopter divisions to form AgustaWestland. In 2004, AgustaWestland came completely under the control of Finmeccanica.
Fokker	Fokker was a Dutch aircraft manufacturer. In the 1980s it had run into financial difficulties almost leading up to its bankruptcy after an ambitious, yet unsuccessful project of developing two new aircraft at the same time. In 1987, the Dutch government prevented the company from going bankrupt by providing it with a loan, but at the same time urged Fokker to find a strong partner. In 1992, the company was acquired by DASA. However, DASA was unable to solve the financial problems at Fokker and in 1996 Fokker went bankrupt. Many of its activities (including the NH 90 programme) were transferred to Stork and continued under Stork-Fokker Aerospace. In 2010 the company was renamed again into Fokker.

The NATO Helicopter Management Agency (NAHEMA) is the international programme office to which the day-to-day management and the negotiation and execution of the contracts with industry have been delegated. It is a NATO (North Atlantic Treaty Organisation) agency located in Aix-en-Provence (France). The representation within NAHEMA is based upon the total number of helicopters intended to be procured by a nation in the NH 90 programme. The General Manager (GM) is responsible for the execution of the programme. Within NAHEMA there are three divisions, engineering, logistics and administration headed by a division leader. The people working within these divisions take part in the different functional working groups in which the representatives of the national programme offices also take seat. In total there are 51 people working for NAHEMA.

Table 5.3 Division of work share

Company	**Responsibility**
Eurocopter France	Cockpit development, rotors and blades, core avionics and control systems, power plants and flight testing of basic prototypes.
Eurocopter Germany	Centre section, fuel systems, avionics, tactical transport mission equipment package and flight tests of army prototype.
Agusta	Main gearbox, iron bird test rig, hydraulic system, naval mission equipment package and flight tests of naval prototype.
Fokker	Tail section, landing gear design, sliding doors, intermediate gearbox, and wind tunnel testing.

Source: Flight International (1998).

We find a similar set up on the industrial side. The four partner companies, AgustaWestland, Eurocopter France, Eurocopter Germany, and Fokker have established NHI (NATO Helicopter Industries), a joint venture located at the Eurocopter France facility in Marseille (France), approximately 7 kilometres from NAHEMA. The structure resembles that of NAHEMA. The actual work gets done at the different plants of the parent companies of NHI. Table 5.3 presents the NH 90 programme general division of work share over the four partner companies.

The total programme covers a number of phases. Each phase is covered by a separate Memorandum of Understanding (MoU) between the nations and a separate contract between NAHEMA and NHI. The programme is divided over the following phases:

1. Feasibility and Predefinition Phase;
2. Project Definition Phase;
3. Design and Development Phase;
4. production Investment/Production Phase;
5. In-service Support Phase.

The first two phases have been completed. In 1992, the design and development phase began. In 2000, the production investment/production phase began, which marked the start the series production of the NH 90. By the end of 2006 the first three series produced helicopters were delivered to the German army. The first helicopters that have entered service with armed forces of the nations have been delivered in a Meaningful Operational Capability (MOC) configuration. Basically, this means that the helicopters that have been delivered do not yet meet the contractual specified operational requirements. It can be used, however, for certain tasks such as initial training. Currently, the partners are discussing the set up for the in-service support phase. The production of the helicopters currently under contract for the founding nations will extend at least till 2018.

5.3 Historical Background of the NH 90 Programme

Here, we will present a detailed overview of the NH programme. Table 5.4 contains a time line of the main events relating to the NH 90 programme to be discussed in the following sections.

5.3.1 Programme Definition Phase 1985-1992

On September 19th 1985, the NH 90 programme Feasibility and Pre-definition Study was given a go ahead with the signing of a MoU between the governments of France, Germany, Italy, the Netherlands and the United Kingdom (Tweede Kamer, 1985[a]).

Table 5.4 NH 90 programme chronology

Date	Event
1979	Agusta (Italy) and Westland (UK) formed European Helicopter Industries to develop the 15 tonne EH 101. France and Germany refused participation noting they did not have a requirement for such a helicopter.
1984	Germany and France announced their cooperation on the PAH 2 Tigre attack helicopter. This came hard on the heels of Agusta, who together with Westland from the UK under earlier agreements were to join the programme to study a combined A 129 upgrade and PAH 2 attack helicopter programme.
1985	**Start NH 90 Feasibility and Pre-definition Phase**
1985 – 1986	The governments of France, Germany, Italy, the Netherlands and the United Kingdom gave their go ahead for the NH 90 feasibility and pre-definition study with the signature of the NH 90 feasibility and pre-definition phase Memorandum of Understanding.
1985 – 1986	"Westland affair", despite pressure from the UK defence ministry for teaming with a European consortium existing of Aerospatiale, MBB, Agusta and British Aerospace, Westland decides for the Sikorsky (from the U.S.) deal.
1986	The governments of Italy, the Netherlands, Spain and the United Kingdom announce their collaboration in the Joint European Helicopter Tonal Programme regarding the development of an upgrade of the Agusta A 129. In 1990, the programme collapsed when the Netherlands and the UK opted for the U.S. AH 64 Apache (produced by McDonnel-Douglas) instead. Spain joined the Tigre attack helicopter programme.
1987	The United Kingdom and Westland abandoned the NH 90 programme after the UK MoD decided it did not have a requirement for such a helicopter.
1987 – 1989	NH 90 programme project definition and evaluation phase took place.
1990 – 1991	Difficult negotiations between the governments after the work share had to be divided following UK's withdrawal from the NH 90 programme. With Germany and Italy facing budgetary pressures, France and the Netherlands each raised their share in the development costs of the NH 90.
1991	The governments of France, Germany, Italy and the Netherlands signed the General Memorandum of Understanding for the development and production of the NH 90.
1991 - 1992	Concerns arose that France might abandon the NH 90 programme.
January 1992	DASA (formerly MBB) from Germany and Aerospatiale merged their helicopter subsidiaries in Eurocopter.
1992	**Start NH 90 design and development phase**
August 1992	Signing of the design and development contract between NAHEMA and NHI.
1993	Industrial political conflict between France and Italy over the motor to be used to power the NH 90. Initially, it had been decided that the Rolls-Royce Turbomeca RRTM 322 would be used. Italy, however insisted that the General Electric-Alfa Romeo (CT-7E) would receive a chance. In 1994, the issue was resolved by allowing the Alfa-Romeo CT-7E with Italy bearing the

	non-recurring costs.
1993 - 1996	Governments start reassessing their procurement plans after the collapse of the Warschau Pact in 1991. France unilaterally cut its procurement plans for both the Tiger and NH 90 helicopter programmes. In 1996, Germany delayed its in-service date for the NH 90 to 2007 (originally 2004) and France to 2011 (originally 2007).
1997	Difficult negotiations among the participating nations over work share division and investment return for the production investment and production contract. Eventually, the problem was escalated to the level of the NADs. The negotiations between NAHEMA and NHI also were though. The initial price offer from NHI was considered to high and the offer lacked a specification of the costs for initial supply and training.
2000	**Signing of the production investment and production Memorandum of Understanding.**
June 2000	Order placed by the NAHEMO countries with NHI for a first batch production of NH 90s.
2001	Portugal joins the NH 90 programme.
2006	NAHEMO nations became worried about the progress made by the industrial partners. Several programme delays had been announced by NHI. Meanwhile, the number of non-NAHEMO countries procuring the NH 90 was significantly increasing. The NAHEMO governments express their concern that the active marketing of the NH 90 by NHI comes at the expense of ensuring a timely delivery of their NH 90s.
2007	After the delays in the programme had been escalated to the level of the National Armaments Directors it was eventually decided by the governments that NHI required a new managerial structure. Under this new structure AgustaWestland became responsible for the naval variant of the NH 90 (NFH) and Eurocopter for the transport variant (TTH).
	Belgium joins the NH 90 programme.
2008	During a public demonstration on June 1 2008 am Italian NH 90 TTH crashed into a lake after performing a rolling turn. The three crew members were rescued, and taken to the hospital where one of them died of his injuries a couple of hours later. (Defense News, 2008)
	In the second half of 2008 NHI and NAHEMA reached an agreement on the conditions for the delivery of NH 90 in MOC (Meaningful Operational Capability) configuration. This means that NH 90 helicopters will be delivered to nations that do not match the full requirements. These helicopters can be used for a number of purposes such as education and training and coast guard duties. This interim qualification process was agreed upon because of the delays in the programme which caused a gap in the helicopter capabilities of some nations.
2010	In April 2010 the Dutch armed forces received their first NH 90 helicopter in MOC configuration from NHI. In May this was followed by the delivery of the first naval NH 90 to the French armed forces.

In 1985, the “Westland Affair” in the United Kingdom unfolded, one of the major political embarrassments of Thatcher government. Westland had run into serious financial troubles and was actively looking for a strong partner. United States Sikorsky, a subsidiary of United Technologies Corporation together with Fiat from Italy, offered to take a 29.9% stake in the company and the insurance that Westland would gain a substantial work share and the right to manufacture under licence and sell the Sikorsky UH-60 Black Hawk (Freedman, 1987). This deal was much favoured by the Ministry of Trade and Industry of the United Kingdom. The UK’s Defence Department and Westland’s largest customer, on the other hand, feared the deal with Sikorsky could ultimately result in the loss of an independent helicopter design capability (Freedman, 1987).

The then State Secretary of Defence Mr Heseltine asked the Thatcher government to give him some time to look for a potential European solution. He hastily assembled a consortium of Agusta from Italy, Aerospatiale from France, and Messcherschmitt-Bölkow-Blohm from Germany (Freedman, 1987), later joined by British Aerospace. With Sikorsky, Westland had long tradition of collaboration. However, with bidders of the European consortium Westland was involved in two collaborative efforts (i.e. European Helicopter Industries with Agusta from Italy on the EH 101 and in Nato Helicopter Industries with Agusta, Aerospatiale from France and Messcherschmitt-Bölkow-Blohm on the NH90).

While the European consortium and State Secretary of Defence Mr. Heseltine were negotiating a deal, the National Armaments Directors of the United Kingdom, France, Germany, and Italy jointly recommended that future military aircraft requirements should only be met by aircrafts designed in Europe. Westland considered this to be a great impediment to the Sikorsky/Fiat deal. The Thatcher government then intervened by overruling the National Armaments Directors’ recommendation, stating that by 13 December 1985 it would not be bound by it anymore unless by then Westland had received an offer from a European consortium that it could accept and defend towards its shareholders.

The offer of the European consortium was declined despite the prospects of substantial work share on three European programmes, the EH101 with Agusta, the NH90 with Agusta, Aerospatiale, MBB and Fokker, and an attack helicopter. Nonetheless, the Board at Westland favoured the Sikorsky/Fiat solution and announced on the day the

ultimatum of the National Armaments Director expired that it had reached a deal with Sikorsky/Fiat. This news came hard on the heels of members of the European consortium. Aerospatiale immediately indicated that under the NADs' recommendation, the Sikorsky/Fiat deal would imply an end to Westland's participation in the European programmes. This is indicated in the letter that Prime Minister Thatcher wrote to Sir John Cuckney, Chairman of the Board of Directors at Westland: "… *you should be aware of indication from European governments and companies that they currently take the view that a number of projects in which Westland are expecting to participate in cooperation with other European companies may be lost to Westland if the United Technologies/Fiat proposals are accepted*" (Thatcher, January 2, 1986). Especially, Westland's work share on the NH 90 programme was in jeopardy, because the Black Hawk was a direct competitor to the NH 90 (Freedman, 1987).

Although the State Secretary for Trade and Industry Brittan and Prime Minister Thatcher not only took the stance that Westland as a private sector company should be allowed to decide for itself but also favoured the Sikorsky option, State Secretary of Defence Heseltine continued to press for more time allowing the European consortium to prepare a new bid. Subsequent events within the Thatcher government resulted in the resignation of Mr Heseltine in January who felt his views were suppressed by the Cabinet of UK Prime Minister Thatcher.

Eventually, the Sikorksy/Fiat deal went through despite the pressure from the Defence Department and the European consortium. Nonetheless, Westland and Agusta continued to collaborate on the EH 101 helicopter. In 1987, Westland and the UK abandoned the NH 90 programme after the UK army had dropped its requirement for the 9 ton NH 90 in favour of the 15 tonne EH 101 (Flight International, 1986: 37).

In November 1986, the feasibility and pre-definition phase was completed. From 1987 till 1989 the project definition and evaluation phase took place, which was evaluated satisfactorily by the partners in the programme (Tweede Kamer, 1990). After the Project Definition and Evaluation phase the first difficulties emerged. Following the withdrawal of the United Kingdom the work share among the nations had to be redefined. France and Italy would have to take 35% each, Germany, 25% and the Netherlands 5%. However, Germany and Italy faced budgetary pressures and were eager to reduce their work shares in the development phase. Germany even threatened to abandon the programme altogether if its

work share was not reduced to 21%, and Italy was hard pressed because of financial problems in its other helicopter programme (Flight International, 1991: 5).

During 1990, negotiations between France and the Netherlands kept the programme going after each agreed to increase its work share. France took a 43.4% stake in the programme, the Netherlands 6.6%, Germany 23.6%, and Italy, 26.4%. (Flight International, 1991: 5). In 1991, the General Memorandum of Understanding was signed by the participating nations, followed by the establishment of NAHEMA, the intergovernmental agency responsible for NH 90 contract management (Tweede Kamer, 1991). The first flight of the NH 90 was scheduled for 1993 and the first deliveries to the nations were scheduled for 1998. Nonetheless, a year later, in 1991, the programme would again linger. With the decline of the Soviet threat many western countries started to re-evaluate their equipment plans. From the French side there were some contradictory signals as to their position in the NH 90 programme. Concerns arose that the French would abandon the programme altogether (Flight International, May 1992: 23; Tweede Kamer, 1991). But by the end of 1992, the programme was back on track with the approval of the design and development contract by the participating nations in August 1992 and the signing of the contract between NAHEMA and NHI one month later (Tweede Kamer, 1992b). By that time the flights of the first 3 prototypes were scheduled for 1995 and the first deliveries of the NH 90 to the armed forces of the nations were expected to take place in 2000 (Tweede Kamer, 1993a).

5.3.2 Programme Design and Development Phase 1993 – 1999

The decision to go-ahead with the design and development phase coincided with some important developments. In Germany, a large restructuring of its aerospace companies had been underway, which culminated in the creation of the "national champion" Deutsche Aerospace AG (DASA) (the aerospace subsidiary of Daimler Benz) in May 1989.[5] Later that year, DASA acquired MBB. On January, 31st 1992, DASA and Aerospatiale merged their helicopter divisions into Eurocopter (McGowen, 2005). Already in 1987, the Dutch

[5] In 1995, the company was renamed into Daimler-Benz Aerospace AG. After the merger between Daimler-Benz and Chrysler in 1998 the company name was changed to DaimlerChrysler Aerospace AG. July 18th,, 2000 the company merged with Aerospatiale-Matra and Construcciones Aeronáutics SA (CASA) from Spain to form the European defense conglomerate EADS (European Aerospace, Defence and Space company), of which Eurocopter became a fully owned subsidiary.

government had urged Fokker to find a strong financial partner (Tweede Kamer, 1992a). Fokker had run into serious trouble because of setbacks in its civilian aircraft programmes. The Dutch government already had to financially support the company to prevent bankruptcy. Discussions concerning a potential integration were opened with DASA. After years of tough negotiations an agreement was finally reached in 1992 (Tweede Kamer, 1993b).

At the same time though, the ramifications of the fall of the Berlin Wall in 1989 and the collapse of the Warschau Pact became visible. Many countries were reconsidering their equipment plans and even major collaborative programmes were being re-evaluated. In France alone, there were talks of cutting the equipment budget by as much as 8.5% (Flight International, 1993: 4). French parliamentary finance committees were particularly keen on the NH 90 programme as a candidate for cancellation (Flight International, 1993: 4). The new procurement plan of the French government demanded a 30% cost reduction on the NH 90. Within this context a debate between the French army and navy emerged over the continuation of the NH 90 programme. While the navy still wanted to procure the NFH 90, the army was considering procuring the cheaper Cougar helicopter instead of the NH 90. (Flight International, 1994a: 19). In Germany, similar developments were under way. The German navy also became concerned with the costs of the programme and reduced its requirement from 50 to 38 aircraft. Moreover, it also considered the possibility of procuring a cheaper version of the basic NH 90 equipped for maritime use instead of the NFH 90 (Flight International, 1994b: 14). At a political meeting in Paris in October 1994, all the partners expressed their continuing commitment to the programme (Tweede Kamer, 1994)

The signing of the production investment was delayed from 1996 to 1997 and the schedule for the in-service date of the TTH 90 was delayed from 2000 to 2002 (Flight International 1995a: 16). Germany pushed back its NFH 90 in-service schedule to 2004 and spread its schedule of its 38 naval NH 90 to 2010. The German Navy was forced to update its fleet of Sea Lynx Mk88s, which were originally intended to be replaced by the NFH 90 in 2003. On top of this, it had to procure an additional 7 Sea Lynx helicopters for the frigates that entered service. Despite press rumours, the German Ministry of Defence announced that they would continue the NH 90 programme (Flight International, 1995a: 16).

The real first industrial political conflict that emerged in 1993 concerned the decision on which motor would be used to power the NH 90. Earlier on, a decision had been reached to use the Rolls Royce-Turbomeca (RRTM322). Italy, however, started to press for the use of the General Electric-Alfa Romeo (CT-7E). Germany and the Netherlands were not necessarily against the use of the GE-Alfa CT-7E, but pressed France and Italy to come to a decision soon. The great industrial interests for both France and Italy led to postponement of a final decision until 1994 when the General Electric-Alfa motor was allowed, with Italy bearing the non-recurring costs[6] (Tweede Kamer, 1994).

Meanwhile, the French government had agreed on the new procurement outline. For 1996, the procurement budget was reduced by 10% compared to earlier plans. At the same time, though, it was decided that France would continue its participation in both the Tiger and NH 90 programmes. However, it would delay its delivery schedule of the aircrafts (Flight International, 1995b: 5). But in 1996, a unilateral French decision to cut both Tiger and NH 90 procurement numbers created political upheaval in Germany (Flight International, 1996: 14). The French army was to acquire only 120 Tiger attack helicopters instead of the earlier planned 215, and the number of NH 90s that would be procured was cut to 68 instead of the expected 160. The French navy, which had planned to procure 60 NH 90s, would receive only 27 helicopters (Flight International, 1996: 14).

At the Steering Committee meeting, November 3rd through 5th 1996, Germany postponed its delivery date of its NFHs to 2007 (four years later than initially planned) and France postponed its delivery date of its TTHs to 2011 (Tweede Kamer, 1996).

The negotiations concerning the pre-production investment/production during 1997 contract were tough. The partners could not agree on issues of work offset and investment return (Flight International, 1997: 17). This was the result of different interpretations of the relevant articles of the Memorandum of Understanding. To get out of the deadlock the Steering Committee convened in December 1997 to discuss a German proposal. The proposal was supported by Italy and The Netherlands, but proved unacceptable to France. Subsequently, the problem was escalated to the level of the National Armaments Directors (NADs) (Tweede Kamer, 1998[a]).

[6] Non-recurring costs refer to the costs only once occurring associated with the use of an alternative engine (or other systems).

Not only did the negotiations between the governments prove to be hard fought, also the negotiations with industry for the pre-production/production investment did not progress very smoothly. In October 1997, the nations received the offer of NHI. The governments were not pleased with the price offered and its argumentation. The offer also lacked a specification of the costs of initial supply and training. The Steering Committee, subsequently, admonished NHI to significantly reduce the costs of pre-production and to reduce the unit costs to a level in line with the market (Tweede Kamer, 1998[a]: 2). During these contract negotiations the Dutch government postponed its delivery schedule to 2007. Following the postponement of the delivery schedules of the other countries the Netherlands had become lead customer and was unwilling to bear the extra risks associated with this position (Tweede Kamer, 1998[b]: 4).

It took until the middle of 1998 before a final agreement over the work share division was reached among the governments (table 5.5 shows the final division of the work share). In July that year, NAHEMA received the new offer by NHI. The NAHEMO countries accepted the new offer of NHI, which included a price reduction of 12.9%, compared with the offer of the year before under the condition that the contract was signed that year. Meanwhile, in the Netherlands Fokker had filed for bankruptcy in March, 1996. The activities of Fokker were transferred to Fokker Aerostructure B.V. and in 1996 acquired by Stork to which the Dutch NH 90 work package was transferred (Tweede Kamer, 1997).

Table 5.5 Number of intended orders and division of work share

	Share in development phase	**Share in value of the number of ordered helicopters**	**Work share in production phase cf. General Memorandum of Understanding and negotiations.**	**Number of ordered TTHs**	**Number of ordered NFHs**
France	41.6%	24%	Fr. and Ger. together 61.5%	133	27
Germany	28.2%	36.5%		205	38
Italy	23.7%	33%	33%	155	64
Netherlands	6.5%	5.5%	5.5%	-	20

Source: Tweede Kamer (1999: 7)

5.3.3 Programme Production Phase 2000 – 2011

Although the programme encountered a number of problems and at times had been on the verge of being completely abandoned, on June 30th 2000 the production contract was signed and an order for a first batch of helicopters was placed at NHI. The contract was worth 6.6 billion euro. The first production batch consisted of 298 helicopters (of a total requirement of 595 helicopters). The founding nations agreed to contribute 25% of the production investment costs (Flight International, 2000c: 5).

NHI was keen on closing the deal soon. A firm order from the founding nations was likely to increase confidence of potential export countries in the programme and product. By that time a number of countries had shown interest in the NH 90 programme. The NH 90 was offered in the competition for the Nordic Standard Helicopter Programme (NSHP) of Norway, Sweden and Finland (Flight International, 2000a: 18). Portugal had also placed an interest in the NH 90 programme (Flight International, 2000b: 8). Belgium became the fourteenth buyer of the NH 90 and the sixth member of NAHEMA in 2005 (see table 5.6 for the NH 90 order book of NHIndustries).

Table 5.6 NH 90 order book

	TTH	NFH	Total
France	34	27	61
Germany	122		122
Italy	70	46	116
The Netherlands		20	20
Portugal	10		10
Belgium	4	4	8
Subtotal NAHEMO	240	97	337
Norway		14	
Finland	20		
Sweden	18		
Spain	45		
Greece	20		
Oman	20		
Australia	46		
New Zealand	9		
Subtotal Non-NAHEMO	178	14	192
	418	111	529

Sources: www.nhindustries.com (accessed November 11, 2009). NHIndustries (2010) press release of December 16, 2010 confirms firm orders for 529 NH 90 helicopters for 14 different nations (accessed December 25, 2010). Tweede Kamer, 2011: 4.

While the NH 90 order book would grow during these years, the programme also suffered from delays. The industrial partners struggled with the qualification of the helicopter. The qualification process entails the testing and subsequent documentation of a helicopter to see the extent to which it performs according to the original requirements of a nation. The qualification of the first German army TTH was expected to be completed in March/April 2006 and the first Italian NFH was due for qualification in the first half of 2007, almost two years behind schedule (Taverna and Nativi, 2006).

The countries became dissatisfied with the progress being made on the programme. The French Defence Minister Michele Alliot-Marie called the delays "unacceptable" (Taverna and Nativi, 2006). Francois Lurea, the head of the French DGA noted that an audit of the NH 90 programme found development failures at Eurocopter and difficult relations between Eurocopter and AgustaWestland, and management problems at NAHEMA. In particular, the latter issue prompted French officials to propose to transfer programme responsibility from NAHEMA to OCCAR (Organisation Conjointe de Cooperation d'Armements) (Taverna and Nativi, 2006). And a year later, the Dutch and German governments publicly announced their concerns with the delivery schedules of their helicopters. Dutch state secretary for defence, Mr Van der Knaap expressed his concerns on behalf of the Netherlands and Germany to NHI management. NHI acknowledged the problems, but at the same meeting informed the Dutch state secretary of a further delay of 4 to 6 months with respect to delivery of its first NH 90. Following a proposal by the Netherlands, the NH 90 Steering Committee demanded a monthly report on production planning from NHI (Lok, 2007a: 39). Other measures such as a reduction in procurement numbers by France were taken as well.

Despite the concerns raised by the founding nations in February 2007, NHI announced another delay with the delivery of the NFH. According to the new planning the armed forces would not receive their first NFH90s until well into 2009. A letter from the Dutch state secretary of defence to the Dutch parliament notes: "*This is an additional delay of 15 months compared to the previously planned delivery date of April 2008 that was taken into account by the Ministry of Defence we were using only a few months ago. It means nine*

to eleven months additional delay compared to the four to six months delays that was told to me during a meeting with NHI on February 2, 1997." (Tweede Kamer, 2007).

At this time the founding nations started to express their concern with the active marketing of the helicopter to export countries by the industrial partners instead of ensuring the timely delivery of the NH 90 to the launching customers (Lok, 2007b).

Moreover, the Steering Committee demanded a restructuring of NHI. In the new structure AgustaWestland assumed programme responsibility for the naval variant of the NH 90, while Eurocopter gained programme responsibility for the transport version of the NH 90. This division of labour between the two companies put Fokker in an odd position. It implied that Fokker became a subcontractor for AgustaWestland and Eurocopter, but with prime contractor responsibilities. Finally, it was agreed that Fokker would no longer have a seat in the Board of Directors of NHI, but Agusta and Eurocopter would guarantee a fair share of the work. It would also keep its position on the supervisory board overseeing the activities of the board of directors of NHI (Tweede Kamer, 2008: 2).

In May 2008, NHI announced another delay in delivering the NH90. In the production planning the delivery of the first fully operational Dutch NFH has been postponed from July 2009 to April 2011. It did announce that it could temporarily offer NH 90s in a "Meaningful Operational Capability", which meant that although the helicopter was not fully operational, it could be used for tasks such as training and education (Tweede Kamer, 2008: 7). Table 5.7 contains the most recent available data on current deliveries of the NH 90 by NHindustries.

In the meantime, some nations also started to express concerns over the division of work share. The Netherlands, Germany and Italy were all behind in receiving the work share they were entitled to (see table 5.8 for an overview of the initially agreed division of work share and the current work share division). Most of the contract value has been awarded to French companies. Although France, at least for the time being, has procured less helicopters than it originally intended to, it has received the largest share of the total contract value in terms of work share. At this moment it has received approximately 37% of the work share, while based on the original agreements it is entitled to 30.85 % of the work share. In this sense, French businesses profit more from the programme than companies from the other nations.

Table 5.7 Number of delivered NH 90s

	TTH	NFH	Total
France		3	
Germany	18		
Italy	12		
The Netherlands		3	
Portugal			
Belgium			
Subtotal NAHEMO	30	6	36
Norway			
Finland	9		
Sweden	6		
Spain			
Greece			
Oman	4		
Australia	13		
New Zealand			
Subtotal Non-NAHEMO	32		32
Total	62		68

Source: Tweede Kamer 2011: 4.

Indeed these latter nations seem to be pressing France to get the work share in line with the original agreements. For the Netherlands there is an additional problem. The most dominant companies AgustaWestland and Eurocopter appear to be reluctant to include Dutch companies in their supply chain. The division of the work share had been carried out at an early stage by these companies preferring companies from their own countries. Now they indicate that it is very difficult to include other companies in the production phase (Tweede Kamer 2010:5).

Table 5.8 Initially agreed division of work share and current division of work share

Country and intended number of orders	Intended order as % of total number of orders	Initially agreed work share in %	Current work share in %	Current work share in Million Euro
France	26.45	30.85	37.05	3822
Germany	36.20	30.85	28.12	2900
Italy	32.40	31.60	29.22	3014
The Netherlands	3.31	5.5	4.4	454
Portugal	1.65	1.2	1.2	124
Total	100%	100%	100%	103.14

Source: Tweede Kamer 2011: 6.

5.4 Concluding Comment

In this chapter we set out to give a description of the NH 90 programme. We started by detailing the political and historical context in which the NH 90 programme was established. European governments in the 1970s sought closer cooperation with each other in the development and production of military equipment. A number of development and production programmes were underway to give a boost to European helicopter manufacturers. Originally, it was intended to combine these programmes and to produce a family of helicopters to serve the requirements of the participating governments. Yet subsequent events (the withdrawal of France and Germany from the EH 101 with Italy, and the abandonment of the UK of the NH 90 programme after the "Westland affair" in 1986) resulted in quite a different situation for the European helicopter industry. Later the German and French agreement on the PAH 2 attack helicopter at the exclusion of Italy and the United Kingdom would again put strain on the relationships between the companies and governments involved. Especially, for Agusta this proved a bitter pill with the PAH 2 Tigre attack helicopter being a direct competitor to its own A 129 Mangusta. In 1986, Italy, the Netherlands, Spain and the United Kingdom agreed to cooperate on the development of an upgrade of Agusta's A 129 attack helicopter in the European Helicopter Tonal Programme. Yet, this programme collapsed in 1990 when the Netherlands and the United Kingdom

decided to procure the American AH 64 Apache developed and produced by Hughes and McDonnel Douglas (currently produced by Boeing).

Amidst this industrial-political turmoil, the NH 90 programme faired relatively well for a four-nation programme, until the 1990s. The programme was upheld when after the withdrawal of the UK the work share had to be re-divided between the remaining programme partners. This was particularly difficult in a climate in which Italy's and Germany's budgets were pressured, with the latter even threatening to abandon the program altogether. In 1991, the governments of France, Germany and the Netherlands signed the General Memorandum of Understanding and formally established the NATO Helicopter Management Agency (NAHEMA) as the executive agency working on their behalf. Not much later, the programme became endangered when it was subjected to scrutiny in France. Eventually, the programme survived the political instabilities of the early 1990s and in August 1992 the governments gave their consent for the signing of the contract between NAHEMA and the industrial consortium NATO Helicopter Industries (NHI).

From mid 1990s to the end of the millennium, again political difficulties emerged when some nations indicated they might buy fewer helicopters than originally foreseen and some nations delayed their in-service dates for the helicopter. The production contract negotiations were particularly tough, but in 2000 the Memorandum of Understanding covering the production contract was signed between NHI and NAHEMA.

During the production phase, technical and managerial problems plagued the NH 90 programme leading to substantial delays. Nonetheless, on the export market the NH 90 became successful with more than 10 countries outside of the founding nations procuring the aircraft. Yet, this also fuelled frustration on the part of the governments of the founding nations, worrying that NHI spends too much effort in the marketing of the helicopter to other nations instead of delivering the ordered helicopters to the launching nations.

CHAPTER 6 UNRAVELLING THE LOGICS OF THE NH90 NATIONS

Our first research question involved answering the question if and in what manner the logics of the NH 90 nations differ. This chapter is dedicated to answering this question. Based on our literature review of research on institutional logics presented in paragraph 2.3 and of the defence industrial policies and the features of the general business climate of the NH 90 nations described in chapter 3 we developed an initial coding protocol for the analysis of the interview material. We were particularly sensitive to differences in defence industrial policies, and differences in organisational structures and roles, nevertheless we remained open-minded with respect to other categories that might prove relevant in our research context (see Chapter 4 for a further description of the procedures used for the analysis of the data.)

Further analysis of the interview data allowed us to identify two main dimensions on which the logics of the founding NH 90 nations varied. These two main dimensions themselves are made up of a number of constitutive elements. The first main dimension, *Defence industrial orientation* describes the degree to which a nation is concerned with defence industrial matters, like sustaining an independent domestic source of supply of military equipment. Subsumed under this dimension are the nature of government company relationships, the degree to which exports are deemed important to sustain this domestic source of defence production and the degree to which a nation supports the establishment of a European defence industry. The second main dimension concerns *programme control* and describes the manner in which governments exert control over a programme. The constitutive elements comprising this dimension are programme management control and parliamentary control. The former describes the degree of autonomy in decision-making delegated to programme management. The latter describes the degree of oversight by members of parliament on programme matters. In the following paragraphs we will detail how the nations of the NH 90 programme vary on these dimensions and their constitutive elements.

6.1 Defence Industrial Orientation

Historically, many, if not all western countries have had a strong interest in maintaining domestic defence technological capabilities as a prerequisite for the protection of their national sovereignty (James, 2002). The protection of its territorial sovereignty has for centuries been one of the primary reasons for the existence of the nation-state. This is clearly seen in the relatively slow progress made in the formation of a European Security and Defence Policy (ESDP). Governments are reluctant to give up their freedom in determining their defence and foreign policies.

This is also why the defence industry is exempted from the European Communities' internal market rules. Although economic growth over the past few decades has reduced the importance of defence procurement as a driver for industrial progress, it used to be an important instrument for industrial development in many nations. Aerospace and defence industries have been generally regarded as a leading, high tech sector central to the international competitive posture of nations (Hartley, 1993). Howard (cited in Suchman and Eyre, 1992: 154) once wrote the following about the material and symbolic significance of the battle ship late 19th century: "*The battle ship was indeed a symbol of national pride and power of a unique kind; one even more appropriate to the industrial age than armies. It embodied at once the technological achievement of [the] nation as whole, its world-wide reach and, with its huge guns, immense destructive power. It was a status symbol of universal validity, one which no nation conscious of its destiny could afford to do without.*" These words could easily apply to the indigenous aerospace capabilities of nations during much of the latter half of the 20th century. Many European governments, in the decades following the Second World War have invested tremendous resources to secure indigenous aerospace and defence capabilities.

This desire to maintain at least some independent domestic capabilities is also the main reason behind the slow pace in the creation of a European defence industry. Although some efforts have been made, not in the least place by the formation of numerous joint ventures between the main defence companies with or without governmental support. Yet, further consolidation and integration has proven difficult. Although the formation of a few companies (e.g. EADS, Finmeccanica, BAE Systems, Thales) with a strong trans-European and

in some instances even a strong transatlantic orientation has occurred. Their complete integration has been hampered by governments' concern with security of supply of equipment and spare parts. Moreover, those governments with a large defence industrial base have also been wary of further integration out of fear that it might lead to loss of jobs in their domestic defence industries.

These examples indeed indicate that institutional logics in defence industrial politics are largely nationally circumscribed. This is clearly seen in the division of work share among the nations and the division of responsibilities within NAHEMA (as discussed in the previous chapter). The importance of the national dimension was also frequently stressed by respondents during interviews. For example, a German BWB official commenting on the work share division made the following remark:

> *"If you wanted Italy to participate, Italian industry had to be in. If you want Germany to participate, then German industry needed to be in. If you want to have the Netherlands involved, Dutch industry had to be in. It's simple as that."* (Interview German Director Division Air)

The importance of the national boundaries in the NH 90 programme was also clear from the language used in official documents and by respondents. Documents are signed by the governments of the respective nations. Respondents most generally referred to nations as the primary actors. Moreover basic regulations pertaining to auditing of the private companies, final qualification of the helicopter and airworthiness regulations are also nationally circumscribed. For example, the national auditing agencies responsible for auditing the NHindustries partners are only allowed to examine the company that is based within their national territory. Similarly, all nations have their own qualification process in which the final performance of the helicopter is being assessed against the contractually specified requirements.

France

In chapter three, we have described the basic institutional features of the French procurement system and the primary efforts by the French government to change the

system. We have noted that although a wave of privatisations and European cross mergers have occurred, the main characteristics have been relatively persistent. The main features, described earlier, were relatively stable and frequent interactions between the French DGA and national defence firms, mediated by a system of '*pantouflage*' in which higher-level government officials and directors of defence firms often switch between the public and private sectors (Mampauy 2001; Dormois, 1999). The interviews we conducted are largely in line with this earlier description.

With respect to the relations between the national procurement agencies and the national defence firms we noted some differences. All the procurement agencies in our study maintained closer relations to their own defence firms. This is hardly surprising given that the different nations have more (past, present and future) programmes (either national or international), in which their main defence firms are involved. Nevertheless, there seems to exist a difference in the manner in which governments and their defence firms give meaning to their relationship. In France, relationships between the government and industry have tended to remain relatively tight and cooperative. This is reflected in a comment from a French NAHEMA official who was very surprised when he arrived at NAHEMA. He noted that the relationship between NAHEMA and NHI was highly uncooperative,

> *"But I was really surprised when I arrived here and saw that the relationship between the official nations in the agency and the industry was not in a cooperative mode. I was surprised by it. It's really not cooperative, it's more contractually, not my ideal relationship… Because I don't know if you're aware of this contract, this contract protects the customer as it is a fixed price contract for development and production. Really it's difficult for industry to escape, they have an obligation, and if they cannot really meet all the obligations, they will be penalised… The contract is very, very tough. I'm not so fond of this contract, because I believe it was not really the right way to have a full contract covering the production of more than 500 helicopters for more than 15 years. For me it's nonsense."* (Interview French NAHEMA official 1)

This French NAHEMA official describes the relationship between NAHEMA and NHI. He criticises the contractual underpinnings of the contract between the NAHEMA and NHI and seems to be on the defence of the industrial consortium. It is easier to understand this

criticism on the contractual set up of the programme when we look at how French national programmes normally proceed. French national procurement policy stipulates an incremental approach in which the DGA and its suppliers cooperate closely together on development and production. Batch contracts typically do not exceed 3 or 4 years in France. This means that there is much more room for cooperative behaviour between the DGA and French suppliers between contracts. The same French NAHEMA official suggests that whenever there is a contract between the government and industry the relationship will become adversarial,

> *"Cooperation is important with industry between phases sometimes. You have development phases, and before ordering the production of the helicopters (you have phases, author). I believe that it should be important to discuss about the best way to contract for the production… it should be important for me, to really have this in a cooperative way, because we know that, when we have a contract signed it's more difficult to be in a cooperative mode."* (Interview French NAHEMA official 1)

Having batch contracts for 3 or 4 years allows a cooperative mode between contracts. One of the difficulties of the NH 90 programme is the continuation of these practices even inside the programme. A French NH 90 programme official notes that the French government often has contacts with Eurocopter France,

> *"One difficulty of this kind of international program is the direct link between nation and partner company without transparency. Really this is a problem… We know that the French programme manager and HOD (Head of Delegation) have regular meetings with their counterparts in the company… And with the programme manager at Eurocopter. It could be useful, but with more transparency. The problem for us now is that we don't know what's discussed*. (…) *And sometimes it's discussed more in a cooperative way, than inside NAHEMA. We have to stick to the contract. So we have the contractual partners and it's absolutely not cooperative."* (Interview French NAHEMA official 1)

Although these 'unofficial' relationships between the procurement agencies and their national industrial programme partner occurred in all the nations, there seemed to be a general perception that in some nations mutual support was higher than in other nations. A Dutch Fokker official:

> *"I mean there is a customer-supplier relationship. But you can give that meaning in different ways. I have the perception that in France they cooperate very consciously. There is also a very strong intermingling between the private sector and the government, and people who switch, who go from industry to the DGA and back again. A real exchange takes place there. And here [in the Netherlands, author.] it is more like we versus them".* (Interview Fokker NH 90 Programme Manager)

This more or less cooperative relationship between Eurocopter and the DGA is difficult to follow. It often remains unclear what is being discussed there even for the French NAHEMA official. The interweaving of the economy and politics in France is for outsiders difficult to understand. Some respondents pointed to the '*revolving door*' (or *pantouflage* in France) phenomenon in France, where top officials of defence companies are appointed to high level government positions and vice versa. As a former Dutch State Secretary for Defence observed when he was in office,

> *"In France, defence companies are basically state-owned companies. They are so-called partly privatised, but they are actually state-owned companies. The DGA (Director General of Armaments), when I was in office, was the former Director of Peugeot, and that person is simply being replaced there. The state has an enormous 'voice' in this. So it can do a lot with that. It allocates money for it and subsidises it one way or another."* (Interview Dutch State Secretary of Defence 1)

Some authors have suggested that the '*pantouflage*' phenomenon is also partially responsible for the reluctance in French government to expose French industry to full market forces and international competition (Dormois, 1999; Serfati 2000). Although, there seems to be indeed mutual support between the DGA and French Eurocopter, the cooperative nature of the relationship has its limitations. A respondent from Fokker, for

example describes it as '*love-hatred relationship*' (Interview Executive Vice-President STORK) The precarious nature of the relationship between industry and government and difficulty of balancing different public and private interests is illustrated by a quote from a French NAHEMA official,

> *"We cannot wait, wait, and wait. And say to politicians and the parliament: "Oh, its okay, "And you know, the reaction of the partner companies, if a nation is terminating a contract, would be to threat: "If you terminate the contract, I will fire 2000 people". …Yes, we find ourselves in a very odd position. In the rear side, we are working for our own country, and our employment in this country. So, there is a point of no return."* (Interview French NAHEMA official 2)

Among the nations in the NH 90 programme, France is highly committed to European collaboration. Yet, its European commitment is also partially a consequence of its uneasy relationship with the United States concerning defence industrial collaboration (James, 2002). Since, the 1970s it has cooperated on a number of programmes in particular with Germany. For France, these early cooperative efforts with Germany were an effort to gain some control after Germany was allowed to rearmament itself (Lorell, 1980).

Germany

In chapter three we described that the German defence industry was virtually destroyed during the Second World War. Restrictions on German rearmaments imposed by the Allied occupying nations immediately after the war ensured that a German defence industry was almost non-existent until the 1970s when Germany was allowed to rearm itself again. Since then, German defence industrial capabilities have gradually improved. Given that its defence industry is privately owned and less dependent upon government support because of the companies' substantial amount of commercial business, it has adopted a more arm's-length relationship with its main suppliers. As a former German State Secretary of Defence suggested,

"In France the interlocation if I may say so between industry and state is much, much stronger than with us. To a certain extent it was a state-run industry … So, the cooperation, the distance is very close, much more than in Germany. Very close." (Interview Former German State Secretary of Defence)

He added that the relationship between the German government and its main defence suppliers takes on a relationship, which is more "*business-like*." A respondent at Fokker also noted this difference in the relation between the German government and Eurocopter,

"The Germans also liked to please [their government, author], yet they did so out of commercial considerations. They were able to make very good arrangements with their government through customisations, national customisations. And for that they would get the first prize. They were also separately funded by the Germans." (Interview Executive Vice-President STORK).

Germany participated by means of the Bundesambt für Wehrtechnik und Beschaffung (BWB) in the NH 90 programme. It was established over 50 years ago to serve as a central interface between the armed forces and industry (Kausal et al. 1999). Unlike most other procurement agencies (including its NH 90 programme counterparts), the BWB is a civilian organisation. Although it is under the control of the German Ministry of Defence the BWB operates independently (Kausal et al. 1999). In the NH 90 programme, Germany often places additional contracts with their industry. Mostly, these additional contracts, as a German BWB official explained generally serve to bridge a gap between the requirements demanded by the German armed forces and the requirements that were decided within the NAHEMO with the other nations. Yet, a feeling exists that the German government tends to pay more for products and services they order for their own national purposes. A German BWB official provided us with an example. This example concerns the contract negotiations for the IOC (Initial Operational Capability) TTH contract.

"And here the industry tried to separate us from the Italians. They said your contract is much earlier, let's talk to you and they talked to them [the Italians] separately. And

at the end we figured out, because both contracts are surveyed by NAHEMA, that the Italians had much better conditions than the Germans. So at the end we merged it of course. But this was an example where they tried to separate us. It looks like when we try to negotiate alone, this is at least my experience, not with other countries together, we (as the German government, author) – are in worse position, in a less good position. … Normally you think if you talk to Fokker, because you are Dutch, it is better. (For the German government, author) it is the opposite. At least that is my experience." (Interview German NH 90 Official 1)

The German government is highly committed to European cooperation in development and production of military equipment. Much of its more advanced and costly equipment has been produced in collaboration with other European nations (for example Tornado, Eurofighter Typhoon, A400M, Tiger, and NH 90). Politically, the primary motivation for entering European cooperation is the possibility to save costs. Moreover, there is a strong '*intention from the German political level to form European companies which are capable to survive on the world market'* (BWB official). Yet from a MoD perspective international cooperation has an additional advantage. As a German MoD official explained,

"*If you have a common project with some partner nation it is better for yourself, because your political agreement is much easier for a project with other countries, then for a project that is nationally. In Germany, it is that way. In other countries may be it is a little bit different. I know that France is very proud of national projects. In Germany that is not the same case. Our political understanding is to get it very cheap and to have it with partners. And therefore in Germany cooperation is easier than in some other countries."* (Interview German NH 90 Programme Official 2)

In Germany it appears to be easier to get political commitment for programmes that involve other nations. In that sense, international cooperation increases stability of equipment programmes. National programmes have a higher risk of termination or down-scaling. The respondent also notes that this is not necessarily the case in other countries. He indicated that in France national programmes are considered more legitimate given the sense of national prestige that surrounds some programmes. Although, the primary focus

seems to be on keeping costs manageable, the German government does keep track of industrial interests. According to a German MoD official,

> *"… our industry is split into some national projects to get additional money for that project which will make them more flexible, than when they have only international projects and are not in a situation to develop some elements and therefore it is a very complicated situation. The whole story is very complicated."* (Interview German NH 90 Programme Official 2)

International programmes have the downside of elaborate work share arrangements, which make it difficult for national industries participating in a programme to maintain the capabilities to manufacture a complete weapons system. In Germany, this problem is solved by awarding some national projects to its industry allowing certain design and development capabilities to be maintained in German industry.

Italy

Like in France, the Italian government has pursued a policy of privatisation including Finmeccanica (the mother company of NH 90 programme partner AgustaWestland). It continues to retain at least 30% of the shares of Finmeccanica. The Italian MoD also maintains relatively close ties to its main defence equipment suppliers. An Italian NH 90 programme official describes the relations between MoD and industry. This respondent is from the army engineers corps. He belongs to a special branch of officers who specialize in procurement. As part of their education and profession they work very closely with industry to gain a deeper understanding of industrial dynamics.

> *"I am a technical officer, an engineer, and in the army we have this branche of officers, we are not with a lot, and since the very beginning, when I was a Lieutenant, just after receiving my degree of university, I started working with industry. So, in my job it is quite useful to relate with industry, because I did it since the very beginning. So, industry is aware that the counterpart has this kind of background and so the discussion is very easy."* (Interview Italian NH 90 Official 1)

These tight relations between Agusta and the Italian MoD relations are also described by a Dutch NAHEMA official,

> *"Italy is always dealing with Agusta… because Agusta is the home supplier of helicopters for Italy. Moreover, the member of the BOR (Board of Representatives of NHI) of Agusta worked together at the Ministry of Defence in Rome with the current JEC-member, Joint Executive Committee … They know each other. So, they are continuously talking to one another, and for us it is occasionally very difficult to follow that."* (Interview Dutch NAHEMA Official 1)

Unlike the arms-length of the procurement agencies of Germany and the Netherlands this MoD official portrays a very open and trusting relationship between Agusta and his own organisation.

> *"...we know the people, because we have many side meetings, they come here, sometimes we go to them...so we speak really frankly with them and they do the same. Every kind of topic, from the development costs, the programme itself, how long it lasts or about the delays or what the problems are, how we solve them, a common approach, the solution which could be useful for the users, the armed forces and how not to penalize industry too much or... they have to work, they have to guarantee a cash-flow...knowing their problem you know exactly how to work."* (Interview Italian NH 90 Official 1)

A respondent, an employee of Fokker, noticed another tendency in the relations between Agusta and the Italian MoD. He noted a strong tendency at NAHEMA to strictly adhere to the letter of the contract even when circumstances have changed.

> *"But the meaning of such an understanding is different. The manner in which we as Dutch people want it is more like, 'Well, discuss what you can and what you can't do on both sides [industry and government] and then agree on something new which you can fulfil.' While the attitude of Italians is more like, 'continue to promise what*

was agreed upon in the original contract. We know it will turn out to be different, but that is something we will deal with when that moment comes,' because that's not something you can communicate upfront. So, these are different worlds. An Italian will achieve a solution with his government, but through a different process than in the Netherlands." (Interview Executive Vice-President STORK)

In Italy, general practice is to hold on the contract as long as possible, expecting that when problems compile the government will help. In the Netherlands, it is important to be open, to address the problems, and certainly not to conceal them. A respondent from Fokker suggested that this may be related to the nature of the government-industry relationship, in the Netherlands, which is more commercial.

The Netherlands

As mentioned previously, the Dutch government had adopted a stronger market-orientation in the 1980s and 1990s, similar to the one adopted in the United Kingdom by the Thatcher government. This logic is still very dominant in the Netherlands. A former Dutch Minister of Defence noted how the Dutch government initially practiced a defence industrial orientation, but that in the Netherlands using the defence budget for industrial political ends often led to troubles.

"We had these kind of processes while trying to save Fokker, and we had these process with a number of shipyards, we had it with DAF (a Dutch car and truck manufacturer), and in general it ended badly for the economic-political argument to use security money for that." (Interview Former Dutch Minister of Defence)

A former Dutch Secretary of Defence also described this hands-off approach of the Dutch government towards defence companies:

"As the Dutch government, we have nothing to do with Stork. Absolutely nothing. We all have to keep our heads above the water ourselves. In the Netherlands people want

to distance themselves from the defence industry. It is dangerous, it hurts, you will always get in trouble with it." (Interview Former Dutch State Secretary of Defence 1)

In the 1970s and 1980s, a number of defence-related companies had run into financial difficulties. The government intervened on a number of occasions to prevent the bankruptcy of these companies. Nonetheless, many of these efforts eventually failed (examples beside Fokker include DAF trucks, Volvo Cars, RDM shipyards). The Dutch government later returned to its more traditional *laissez-faire* defence industrial policy, limiting its intervention in the management of the defence-related industry. This is illustrated in the following quote from a former Dutch National Armaments Director:

"When you talk about 1990s, that France, but Italy as well, a little in Germany, but the Netherlands certainly did not have a defence industrial policy… Culturally, historically and industrially the Netherlands are positioned very differently in these relations." (Interview Former Dutch National Armaments Director)

A Dutch NH 90 programme official explained the difference further. He also notes that the Netherlands has lost its defence industrial orientation. He also: notes that this is very difficult to understand for the other countries in the NH 90 programme:

"You have to see that in relation to the extent that other nations still practice politics. France is very clear. Italy and Agusta, that goes through, I call it, Economic and Social Affairs, In Germany still many people are employed in the defence industry. In the Netherlands, we let that loose. These countries absolutely don't understand why the Netherlands has done that. We don't get that explained." (Interview Dutch NH 90 Programme Official 1)

The failed attempts in supporting troubled companies in combination with the worsening of the financial situation of the government, led to the adoption of a more market-oriented rationality. As, a Dutch NH 90 programme official explained to us,

"From the other perspective, when you look at the shipping industry, the fact that you let go also means that a core is being motivated to operate autonomously on the market, from which they also can gain all sorts of benefits. Simply, by not being pampered you get strong." (Dutch NH 90 Programme Official 1)

This logic is also reflected in the relationship between the Dutch government and Fokker, the Dutch industrial partner in the NH 90 programme. This relationship, similar to Germany, takes on a more business-like nature, as this quote from this Fokker respondent illustrates.

"In the Netherlands, we tend to view government and industry as two separate entities. I do not want to imply that there is no mutual support, but the business nature is higher than in France and Italy." (Interview Executive Vice-President Fokker)

As an example, of how the liberal market logic is reflected in the relationship between the Dutch government with Fokker, a Dutch NH 90 programme official provided us with an example. All the nations have their own audit agency, which monitor and control the prices of the parts of the helicopter. These audit agencies are only allowed to monitor and control the prices of their domestic industry in the NH 90 programme. So, for example the Dutch audit agency is only allowed to monitor and control the prices of Fokker.

"These audit agencies control the prices. Is this realistic, what raises are in there? We know that the French, the Italians, and the Germans look at this through a different lens towards their industries than we look at Fokker. And that means that compared to the other industries that Fokker is often disadvantaged. Because, we say, 'you count these spare parts and these raises but that is not what we have agreed. That is too expensive.' So, Fokker from its position rightly complains, 'they are allowed to have those raises. So why can't I?' Well, that is Fokker's problem." (Interview Dutch NH 90 Programme Official 1)

In the other countries, the audit agencies occasionally allow their suppliers to increase the price of certain spare parts. For example, an Italian NH 90 official noted that they tend to use a quota of approximately 10% above the costs.

6.2 Programme Control

The second main dimension that has emerged from our interviews concerns the manner in which individual programmes are being managed. Variation exists among the nations in the degree of parliamentary oversight of programmes and the manner in which authority is delegated to the programme manager and his staff.

France

In France, the role of the parliament in defence procurement is limited. Its involvement has been restricted to approving the military programme-laws, which define goals for procurement during a multi-year period offering general estimates of the probable costs (Yost, 1994: 252). Hence, the DGA exercises considerable latitude in individual programme management.

As in Germany and The Netherlands, the French programme manager has an integral responsibility for programme related matters. This integral programme responsibility implies that a programme manager is capable of making autonomous decisions within the performance, time, budgetary framework provided by his superiors. Yet, some respondents noted more subtle differences in how programme managers fulfil their role. For example, a French NH 90 programme official described his role as follows "*making decisions, proposing choices, making innovative solutions to turn around the difficulties and so on*." Yet, he also noted that some other programme managers displayed different attitudes and behaviours towards their role,

> *"For me, the major difficulty is that programme managers, not all of them, but too many, are not in a mind-set of making proposals to improve the process or to enable earlier deliveries or to overcome problems, make compromises. They're more in the mind-set of, it's written in the contract, that's the way it should happen, sometimes*

even though they acknowledge that which was written in the contract was either stupid or not in the best interests of the customers." (Interview French NH 90 Programme Official)

Germany

In Germany, defence procurement is subdued to stricter parliamentary oversight compared to France and Italy. Besides the general evaluation of the equipment requirements and budget, it also must approve of all large contracts worth over 25M Euro (Kausal et al. 1999). In Germany, programmes are managed by BWB. Respondents of this organisation noted this difference between Germany and the other nations. According to a German NH 90 official,

"We said at the beginning, the NH 90 programme is like most other programmes run by the BWB. In other nations, these programmes are run by the Ministry of Defence. So, if you run into fundamental decisions, which have to be taken, we need to go to the Ministry of Defence. But in other nations they are already part of the Ministry of Defence. It can influence the reaction time." (German Director Division Air)

Similar to the Netherlands and France (yet unlike Italy, as we will discuss later) German programme management is delegated to the BWB. It has an integral programme responsibility, which means that it responsible for all programme related decisions within the budgetary, requirements and time framework. Yet, at a higher level, the German procurement organisation appears to be remarkably more complex. Gannon and Pillai (2009) have discussed the compartmentalisation characteristic of German society. This compartmentalisation is clearly visible in the German procurement organisation. According to a Dutch NH 90 programme official,

"In Germany the programme manager delivers a product within a certain budget and timeperiod. That is really a one-dimensional line. The operational commands or the training squadrons are placed at a distance. Well they [the operational commands and trainings squadrons] receive it [the helicopter]. 'This is it. This is what you ordered

a while ago.' We [the Dutch, author] would call it throwing it over the wall." (Dutch NH 90 Programme Official 1)

The complexity of the German procurement organisation is a remnant of the Second World War. Allied forces were keen to restrict German rearmament. This is clearly seen in the structure of the German procurement system with a very sharp separation between the civilian procurement organisation, the armed forces and the political establishment, both organisationally and geographically (the procurement organisation is located in Koblenz, the Ministry of Defence in Bonn and the MODs political level in Berlin).

Italy

A peculiar feature of the Italian programme management is the dispersal of decision-making authority. Italians working in the NH 90 programme often do not have the authority to take decisions. An Italian NH 90 programme official also noted this.

"But when we go at working group level some representatives have enough power to take decisions on behalf of the nation. And this is not the case in Italy. In Italy mostly the representative has not the power to take a decision during the meeting. He can only take note, give the Italian position, take note of the proposal and come back to get the authorisation." (Interview Italian NH 90 Programme Official 2)

In the other nations there is an integral programme management responsibility. Which means that there is a performance, budget, time framework in which the programme officials have to take programmatic decisions. In Italy, this is somewhat different. Here programme officials have to go back for approval of from the armed forces. As a Dutch NAHEMA official told us,

"It is how programme responsibilities are divided. And how you deal with that and especially in a country like Italy that is very difficult. In the Netherlands, Germany, and in France programme managers have an integral responsibility, time, money and product…if you stay within that, you have an integral programme responsibility as

programme leader. That is not the case in Italy. The Italian programme manager is actually a procurement leader. He procures, he is responsible for the contractual aspects. But all other responsibilities are somewhere else in Italy. Often not even within the Ministry of Defence, but at the airbases. And that programme leader cannot direct them. So they can take a completely different position and say, 'I do not feel bound by a decision of the SC (Steering Committee, author) or the JEC (Joint Executive Committee, author).'" (Interview Dutch NAHEMA Official 1)

This dispersal of authority in Italy makes it very difficult to nationally harmonize the Italian position. An Italian NH 90 programme official told us that it is generally more difficult to harmonize the position Italy internally than with the other nations in the NH 90 programme. As a consequence, this impairs the decision making process in the NH 90 programme.

The Netherlands

In the Netherlands the parliament is strongly involved in programme management. All programmes worth more than 25 million Euros are subdued to parliamentary oversight. A yearly programme progress report has to be submitted to parliament. This strong parliamentary programme oversight was also noted by a French official, who noted that this was very '*Dutchy*' (Interview French NH 90 Official) in the programme.

In the Netherlands, the programme manager has an integral programme responsibility as in France and Germany. Programme management is delegated to a dedicated programme office within the Defence Materiel Organisation. Like in Germany there is no direct link between NAHEMA and the Dutch armed forces. Yet, we have seen that subtle differences in the fulfilment of roles exist. Comparing his role to his German counterpart, a Dutch NH 90 programme official noted the following difference.

"*The German has received a framework from his organisation. He is responsible for this product, time and money. I have this as well, but here we really work in a 'triangular structure'. We are talking about the 'prioritiser', maintenance and the user. And this project is placed higher up in that trapezium and I often chair these*

meetings. We 'polder' (a Dutch word to describe the consensus seeking attitudes and communicative behaviours of individuals with divergent interests as described in Chapter 3, author) extensively, but it also means that we walk together on a very broad tire. All the parties involved. So, when OPCO (Operational Command, author) says, this is something that I cannot accept technically, I can't say: 'Well, this is how we ordered and developed it ten years ago, that's that.' Then I have to find out whether we made a mistake in the programme, and then I have to find out how to solve it. Or when it involves an additional requirement, I have to find money for it. And I have to ask people from DOBBP (Directie Operationeel Beleid Behoeftestelling en Plan, an entity within the Dutch DOD, author), the department that specifies the orders, Do you want this? Do you want to allocate money for it, yes or no? They [German programme management] say, 'No, Contract is contract, Specification is specification.' I don't do that." (Interview Dutch NH 90 Programme Official 1)

What the respondent seems to indicate here is that there exists a difference in how Dutch and German programme managers perceive their duties. Whereas in Germany a tendency seems to exist to act strictly within the confines of the performance, time, and budgetary framework, in the Netherlands a broader perspective is invoked. A programme manager in the Netherlands is considered to be more of problem solver, even for problems that lie somewhat outside his primary responsibility.

6.3 Concluding Comment

In this chapter we presented our findings for the NH 90 nations. Table 6.1 summarises these along two main dimensions we distinguished: defence industrial orientation and programme control. In the NH 90 programme, France and Italy, have a strong defence industrial orientation. The defence materiel organisations in these countries are very concerned with national industrial interests. In Germany, national industrial considerations are also important, but they seem to play a less important role. The Dutch defence materiel organisation is less concerned with national industrial concerns. The Netherlands has since the 1990s pursued a more market oriented approach to the purchase of military equipment.

It has a strong preference for buying military equipment that has already been developed and produced elsewhere. Only when this approach is unfeasible it will look for international cooperation or start a national development and production programme.

Before the 1990s most of the French industrial base was state-owned. This was also the case in Italy. In both countries a privatisation wave took place. Yet, in both countries the government still holds a significant share in its primary suppliers. In Germany and in the Netherlands a stronger separation between the government and its defence industry has developed over the last decades. These differences are also reflected in the interaction between the government and its defence suppliers, which take on a more cooperative relationship in both Italy and in France. In Germany and in the Netherlands, governments tend to take a more arms-length distance towards their main defence suppliers, which culminates in relationships characterized by a more business-like character.

Table 6.1 The dimensions of the institutional logics of the NH 90 nations

Nation/ Dimension	**France**	**Germany**	**Italy**	**Netherlands**
Defence industrial orientation	Very strong	Intermediate	Strong	Weak
Export orientation	Strong	Weak	N.A.	Weak
European orientation	Very strong	Strong	Intermediate	Weak
Government – company relationships	Strong government involvement	Low/intermediate government involvement	Strong government involvement	Low governmental involvement
Programme Control				
Parliamentary control	Low	Intermediate/ high	Low	Intermediate / high
Programme management control	Programme manager with integral responsibility	Programme manager with integral responsibility	Procurement leader, dispersed programme responsibility	Programme manager with integral responsibility

In the Netherlands, Germany and Italy, export is less promoted by the defence materiel organisations of the nations. France has had a stronger export orientation and it has been a strong advocate of greater European cooperation in the development and production of military equipment. Germany also has a strong European focus. In Italy, this appears to be less the case. The Netherlands used to favour a European focus, but over time has become more U.S. oriented.

In France, Germany and the Netherlands the programme managers have an integral programme management responsibility. This means that they have autonomy in making decisions that do not negatively affect the performance, budget and time framework. In Italy, responsibilities are dispersed. The Italian programme manager acts as a procurement leader, while the responsibilities for making decisions with respect to the programme lie elsewhere within the Italian armed forces.

With reference to the description we gave in chapter 3, in this chapter we have seen a remarkable persistence of national institutional logics emerging in the NH 90 programme.

CHAPTER 7 THE ALIGNMENT OF LOGICS

In the previous chapter we have described the logics of the programme actors in more detail and classified them on a number of dimensions. In this chapter we will first start with showing how these differences affected the cooperative efforts of the participating nations and how the process of aligning occurred. Specifically, we will detail the influences of national logics on the standardisation of the NH 90, the management of the delays in the programme and the division of work share between the nations. We will refer to these as the *"costs of alignment"*. We will then proceed with our second research question dealing with how actors try to align their logics. This analysis follows the argument we set forth in paragraphs 2.4 till 2.6 in the theoretical chapter. There we suggested that underlying alignment a sense-making process of noticing, interpretation and action takes place. Moreover, we will specify a number of mechanisms that facilitate these sense-making activities. Chapter 4 contains more detailed information on the respondents interviewed and the data analysis methods we have used.

In chapter two we discussed the work of Bacharach, Bamberger and Sonnenstuhl (1996) at some length. They maintained that for enduring and effective social exchange relationships alignment of logics is required. Yet, their study focused on a hierarchical exchange relationship. Here we focus on an interorganisational exchange relationship – a cooperative effort of a number of nations represented by their procurement agencies – dedicated to the development, production and logistics support of a new military helicopter. We argued that hierarchical alignment is likely to be achieved more easily than horizontal alignment since in the former situation superiors have more coercive means at their disposal to ensure alignment by their subordinates. These coercive means are absent, although not entirely as we will see below, in horizontal exchange relationships. Moreover, we posited that full alignment in the latter condition might not be fully accomplished. Indeed the analysis of our data revealed that full alignment is not a necessary requirement to achieve desirable results. The NH 90 is currently flying, although it is not yet fully operationally capable. Frequently, respondents pointed to the innovative features of the helicopter and the success of the helicopter on the export market. Nevertheless, they also stressed the

difficulties that they had encountered during their cooperative effort like the heavy programme structures, on both the governmental and private side.

What emerged over time was a form of alignment, in which logics aligned to such a degree that the cooperative effort could produce a helicopter that fulfilled most of the needs and requirements of the armed forces of the participating nations. Nonetheless, a number of difficult compromises had to be reached which manifested themselves in *programme delays*, a *lack of standardisation* and issues around the *division of work share*. Before we turn to the question of how the process of aligning occurred we discuss these compromises and solutions reached in more detail in the following paragraph.

7.1 'Costs' of Alignment

We were able to discern a number of instances of alignment among the actors in the NH 90 programme that came with a '*cost*'. As suggested, these costs were primarily observable in the lack of standardisation achieved in the helicopters, the delays that occurred in the programme, and (dis)agreements with respect to the division of work share among the nations. For reasons of clarity we will treat these instances separately. In reality they are often interdependent.

Lack of Standardisation

'Costs' of alignment are identifiable in the number of variants that have been under development and production. We noted earlier that one of the primary objectives in the programme was to achieve as much standardisation as possible within the NH 90 programme. The idea was to build two different versions, a tactical transport helicopter, and a naval variant based on a common design. Yet, over the years the number of variants grew rapidly. Now there are about 24 different versions. The differences between the variants range from alternative communication systems to different engines. Yet, to what extent this is related to conflicting logics is not always easy to establish. In the case of communication equipment it makes sense to use the same communication systems that are already used in

other equipment of national armed forces. This is, however, somewhat different in the case of the engines of the helicopter.

In chapter 5 we already noted the original idea to have the NH 90 powered by the Rolls-Royce Turbomeca engine RTM 322. Yet, Italy later insisted on using the GE T700-T6E. The GE T700-T6E is an engine that was jointly developed and produced by U.S. General Electric and Fiat Avio from Italy. The Italian government bared the non-recurring costs for the inclusion of this engine. Thus far, only Italy and Spain have selected the GE T700-T6E engine to power their NH 90s.

A similar issue emerged during the selection of the sonar for the NH 90 NFH. Here nations also proved unable to reconcile their divergent interests. Basically, the industrial partners were responsible for making a proposal for the sonar to be used on the NH 90. Yet, the nations were unable to reconcile their diverging preferences. As a respondent from Fokker noted,

> *"And subsequently, you see that the country that did not get its way, that was France, and you are talking at state secretary level, pushed a second sonar through. To be sure, itself financing an important share of the costs, but also partly not. A lot of trouble. So, finally there are two alternatives."* (Interview Executive-Vice President STORK)

In this case Germany, Italy and the Netherlands preferred a sonar from ELAC Nautik from Germany, France on the other hand had set its mind on a sonar supplied by Thales from France.

Programme Delays

The delays in the NH 90 programme, in particular the delays occurring in the development phase, could partially be explained by differences in logics among the nations. A German NH 90 programme official noted how difficult it was to harmonize the requirements of the different nations early on in the NH 90 programme.

"Just after the signature of the development contract, and in the first years we had a lot of problems among the nations. The requirements of the users were very different. And it was a very hard fight to come to a conclusion we could give to industry. And say, 'Okay that is the way ahead.'" (German NH 90 programme official 3)

We have seen how some nations pressed for certain specific national requirements, like the Italian requirement for an alternative engine to power the NH 90, the use of different communication systems by the nations, and the selection of another sonar by France. The variance in these requirements generates additional income for the industrial partners in NHindustries. The additional money that NHI receives does, however, come at a cost. NHI has problems managing the different variants, as an NH 90 programme official of Fokker mentioned,

"I think that NHI has made a very big mistake by accepting so many variants, making it extremely difficult for itself, especially in the qualification area." (Interview Executive-Vice President STORK)

The qualification concerns the assessment of the nations of the extent to which the helicopter's requirements that the nations initially specified have been met. This involves a substantial amount of work in terms of testing and providing the appropriate documentation. Yet, this work as a number of respondents suggested has been grossly underestimated by the industry. On top of that, the problem has been compounded because all the nations have their own qualification process instead of just one international qualification process. Moreover, the active selling of the NH 90 helicopter to non-NAHEMO nations by NHI increases the pressure.

It is also here where we see the influence of the diverging institutional logics of the nations in how they deal with this problem. All the nations are affected by the delays in the NH 90 programme. They all have to maintain a fleet of operational helicopters that are due to be replaced by the NH 90. Some nations have been considering a lifetime extension of their helicopters. A French NAHEMA official described the situation in France as follows,

"They [the NH 90 nations] have to look for other solutions like a life extension programme for the old helicopter. You know that France is still using the Super Frelon helicopter. Super Frelons were manufactured at the end of the sixties. So some are more than 40 years old." (Interview French NAHEMA Official 2)

In France, helicopters that are almost half a century old are still operational. The French DOD is investigating the possibility of a midlife extension of these helicopters, while they are awaiting the arrival of the NH 90. Similarly, the possibility of a lifetime extension of the old Lynx helicopters of the Dutch navy has been investigated by the Netherlands. Similar problems also occur in Italy and in Germany. A German NH 90 programme official noted:

"With the NFH it is the same for us, because we intended to have the contract two years ago. Due to technical problems… the whole programme is delayed. The output of this for example is that we are going to close the squadron in Kiel and the navy intends to go to Nordholz, where there is another squadron in Northern Germany. And they intended to introduce the new helicopter NH90 in Nordholz. Since we delayed the programme, they have to take their old Sea Kings and transfer them from Kiel to Nordholz. It cost millions." (Interview German NH 90 Programme Official 3)

The delays also seriously affect personnel planning, because some crews have already been trained in flying and maintaining the NH 90, yet they still have to fly the old helicopters. Yet, where the difference in institutional logics sets in is in the way that the different nations deal with these issues. The Netherlands has been particularly keen on receiving their helicopters in time. As a Dutch Ministry of Defence official noted,

"What is at stake here, is that every nation is closer to its own than to foreign industry. When very sensitive decisions have to be taken, nations will position themselves differently. To give an example, what bothers us from the Dutch side is that there is so much energy being spent on the sale of new helicopters instead of delivering helicopters on time to the launching customers." (Interview Dutch Director Projects and Procurement)

The respondent notes how industrial political concerns influence the position of the nations when important decisions have to be made. He notes the dissatisfaction of the Dutch DMO with the active marketing of the helicopter by NHI to potential export countries instead of delivering the helicopters to the original NAHEMO nations. The respondents describes how The Netherlands has suggested to stop all contributions to the qualification process of non-NAHEMO nations,

> *"The Netherlands says, 'We will stop the contributions to the qualification process of non-NAHEMO countries.' Well, in the other countries, I think they will scratch themselves behind their ears, because that is employment. They make a different assessment."* (Interview Dutch Director Projects and Procurement)

For the other countries, particularly in Italy and France, to stop the contributions of the qualification process for the non-NAHEMO countries would be much more viewed in terms of industrial prosperity and employment, making it less likely for them to follow the Dutch position on this matter.

Division of Work Share

One of the primary motivations for the nations to cooperate on the NH 90 programme, and to collaborate on development and production programmes more generally, is to save costs. Research & Development money is spread out over a number of nations, and in the production phase the unit costs decrease with increasing production numbers. Yet, cooperation also induces inefficiencies. Participating nations, generally insist to spend their money inside their own border, the so-called 'no money across the border' principle. In this regard, the NH 90 programme does not pose an exception to this rule.

If a nation wants to participate in the programme it will demand a work share for its national industry at least equal to the size of its contribution in funding. An important inefficiency that this creates is that often industries have to be included that are not necessarily the best suited for the job. Moreover, in the NH 90 programme two helicopter manufacturers, AgustaWestland and Eurocopter, that on the world helicopter market are fierce competitors, are working together. This is directly related to the division of work share among the partners. This has also been one of the primary issues in the NH 90 programme.

Dividing the work share is also one of the primary difficulties that have to be dealt with between the nations and their national industries. It is also here where institutional logic plays a dominant role. As a German NH 90 official explained to us,

> *"Each cooperation is underlined in a MoU. In the MoU the rules for this cooperation are fixed. And the rules normally say: the numbers which are intended to be procured are leading, and following that, the work share and the cost share are divided. Normally, the work share and the cost share are the same. If now, between development and production, a nation decided to only procure half of the intended helicopters, they have to give away work share. That is part of the rules. And some nations play different than other nations."* (German Director Division Air)

In the Memorandum of Understanding the rules are specified. The work share was based on the number of helicopters that a nation intended to procure. Thus, if a nation intended to procure 25% of the total number of initially agreed helicopters, it would receive 25% of the work share. Yet, a new issue for negotiation emerges when nations later decide to procure fewer helicopters than originally intended.

In general, in the NH 90 programme nations tend to procure fewer helicopters then they originally intended mostly because of budgetary reasons. This would mean that later on the division of work share had to be adapted to ensure that the cost share and work share would be in balance again. Yet, as the respondent notes some nations play this game differently than other nations. In chapter 4, we discussed the budgetary restrictions that Italy and Germany faced after the signing of the development and production MoU early 1990s. We also noted the subsequent agreement between France and the Netherlands to increase their financial contribution in the development work of the programme.

Originally, France intended to procure 220 NH 90s, but decided in 1996 to procure only 160 helicopters. Germany also reduced its order to 243 from an originally planned off take of 272 helicopters at that time. Italy increased its order from an originally planned 214 to 224. Another reduction in NH 90 procurement numbers occurred in 1998, when Italy reduced its order to 196, later followed by Germany cutting its order to 219. The Netherlands never changed its order for 20 NH 90s. These are the procurement numbers that have been agreed upon in the Production/Production investment Memorandum of

Understanding. These reductions in procurement numbers are not uncommon and can occur for a variety of reasons. Industrial interests may play a role, yet over a period of 20 to 25 years, requirements may have changed, or a nation's budget is under pressure. Nonetheless, this requires that the division of work share has to be adjusted to reflect the changed cost share in the programme. This adjustment in work share creates additional inefficiencies. As a German NH 90 programme official explained,

> *"France is the global player in this programme. They had more than 42% in the development costs. So, in the development phase, they spend 42% of the money and they had 42% of the work share. Now the work share is more going into the direction of Italy and Germany who have more helicopters than France. But the work share has to be adapted. And so the industry is forced to look sometimes to equipment, which is more expensive but belongs to Germany or to Italy, so that is contradicting the idea to save money.*" (Interview German NH 90 Programme Official 3)

So, where France in the development phase had 42% of the work share, Germany, Italy and the Netherlands request an adjustment in the work share division in the production phase and the in-service support phase. Yet, as the German NH 90 programme official argued this is not necessarily conducive to the efficiency motive. It sometimes results in a situation in which the nations select alternative suppliers developing products that are more expensive than when already existing products are used.

Moreover, there was some disagreement among the nations of how to resolve the work share issue. Currently, Germany, Italy and the Netherlands[7] are behind in their work share and are pressing for an adjustment. Yet, France seems reluctant to give up its work share. One of the primary difficulties is that although the Memorandum of Understanding is rather clear on the division of work share among the partners, in practice controlling the vendor work share is a daunting task. A respondent at Fokker referred to it as a 'moving target'. For every negotiated subcontract this work share division has to be taken into

[7] In February 2008 the Dutch Minister of Economic Affairs visited Eurocopter to address the imbalance in work share in front of the directors of NHI and its partner companies. In December 2008 this was followed by a letter from the Dutch Minister of Economic Affairs to the directors of Eurocopter and NHI reminding them of the lack of progress made in the meantime (Tweede Kamer, 2009).

account. A French NH 90 programme official noted that the Netherlands is pressing to align the imbalance in work share division,

> *"We noticed that the Netherlands are very picky on the work share issue… And it is understandable that when tax payers put a lot of money in the program that a nation expects that this amount of money or an equivalent amount of money will be transformed into jobs in the country. But on the other side, we're not putting too much attention on this topic, because if today let's say, the Netherlands are, I would say, maybe 1 percent behind, it's probably less than that, their cost share in terms of work share, we're not going to force industry to find a Dutch compromise or Dutch products or Dutch industry other than on the basis of fair competition. So we are not in favour of getting the precise digits on the work share report and force industry to, instead of running a competition between European industries, to have a contract or a subcontract with a Dutch industry if it's not the best value for money."* (Interview French NH 90 Official)

As the respondent notes, in France they are not very concerned with the anomaly in the division of work share. They are reluctant to compensate for the imbalance between the cost share and the work share, arguing that that if their industry would incorporate Dutch equipment or industry, it would not necessarily be the best value for money. In terms of the institutional logics of the nations we described earlier, one can observe two points.

First, it seems here that the emphasis placed by Dutch NH 90 officials runs counter to its general institutional logic that it does not place too much emphasis on industrial interests. In chapter 6 we noted that industrial interests play only a minor role within the Dutch Ministry of Defence. Here another dimension of the institutional logic of the Netherlands comes into play, namely the parliamentary control on the management of the programme. It is the Dutch parliament that is particularly keen on making sure that the work share is in line with the original agreements.

Second, this French respondent motivates the French lack of attention to the work share issue from a competition perspective. At first sight, this motivation also operates in an opposite direction than the French institutional logic with its emphasis upon own industrial interests would suggest. Possibly, their emphasis on the competition perspective is selective.

This perspective may be useful in resisting Dutch claims for a relatively larger work share commensurate to the number of helicopters the Netherlands ordered. But it does not seem to apply to the size of the French work share. This reasoning fits well when the French national industry has the largest part of the contract value in the NH 90 programme. For example, a Dutch NH 90 programme official notes that France earns substantially more than the other nations,

> "*When you look at the realisation of the work share, the French earn substantially more than the Netherlands and Italy, for example."* (Interview Dutch NH 90 Official 2)

The division of work share we discussed thus far concerns the share of work awarded to the prime contractors in NHI. The imbalance in the division of work share at the subcontractor level is substantially more as a respondent of Dutch Fokker suggests,

> *"The intention of course was that in the same division you see here, 32%, 62%, 5.5% (Italy, France and Germany, and the Netherlands respectively, author**)** that subcontractors would be involved. Well, it will be no surprise to you that when you look at the total work package of NAHEMA and you look at France, that France has about 80%. They are very smart in this. So, French small and medium sized enterprises profit relatively very well from the NH 90."* (Interview Executive Vice-President Fokker)

The respondent notes that the original intention was to have subcontractors of the participating nations involved in the same division as the share holding in NHI. Yet, as this respondent notes France has managed to receive about 80% of the total work package. He notes that the French were very cleaver in realising more work share than they were entitled to. A question that may come to mind is how did they manage to acquire this industrial share? There is not an easy answer to this question. France has a large industrial base and especially in the aerospace industry its capabilities are generally considered to be greater than the capabilities in the other countries. So, if the competition argument would apply this could be a possible answer to the question. Yet, we already saw that the competition

argument does not fully apply in these types of programmes. Alternatively, some respondents pointed to the emphasis placed on the industrial benefits of collaboration for the French economy. An NH 90 programme official from Fokker pointed to the issue of 'common work'. Common work involves the work that is done for the NH 90s of all the NAHEMO nations. This respondent notes how in his opinion the Netherlands has been 'fooled' here,

> *"Before I forget, common work. I think that the Netherlands has been fooled here. Indeed we started with two variants, the TTH and the NFH, and subsequently the work share had to be in line with this. What you expect is that one way or another there is a relation between contract volume and work share. The French have played this extremely smart. They have based the definition of work share on common work. Everything that is not common is also not a part of the work share. You will get the situation that once a programme progresses, things will progressively become less common. Also the variants ensure that things are not common. The consequence is that matters that involve work share decrease over time. And especially in the vendor packages that goes down quickly. So you can see that, for example Agusta, which has 32% of the work share, sometimes has less then 10 per cent share on a contract… Subsequently, you will see that the largest part of the contract volume has been placed in France."* (Interview Executive Vice-President STORK)

According to this respondent, France has managed to receive the largest share of the total contract volume by defining the work share in the programme on common work, the work that has to be performed for all the NH 90s. Yet, over time the common work becomes substantially smaller with the increase in the variance in the helicopters. Eventually, this culminates in a situation in which the largest part of the total contract value has been awarded to French companies. This is also clearly seen in table 5.8 which providing an overview of the status of the division of work share early 2011. At this point it is unclear if and how this imbalance in the division of work share is going to be addressed.

7.2 Sense-making and the Alignment of Logics

Our theoretical model (see chapter 2) posited that alignment is likely to be facilitated through sense-making processes of the partners involved. Furthermore, we posited, based on earlier observations from Jeorg and Brower (2008) that sense-making could further be differentiated as a process consisting of noticing, interpretation and action. We have used these concepts as a coding procedure for our interview material. The results that our coding procedure yielded indeed confirmed the significance of these processes (table 7.1). Further analysis, moreover, revealed that often the action component of a sense-making cycle triggered a subsequent sense-making cycle among the partners and organisations instead of resulting in joint action towards the obtainment of programme goals.

Table 7.1 Sense-making as a process of noticing, interpretation and action

Sense-making activities	Exemplary Quotes
Noticing	"I've noticed that for Belgium and the Netherlands it is very tough to get money for this programme. They have to convince politicians and budgetary committees over and over again." (Interview German NAHEMA Official 1) "And we are suffering from the same. We are trying to get a mandate from the nations, sometimes we succeed and sometimes NHI succeeds too. But for all the main issues, you have the feeling you talk to somebody who is backed by somebody else, and when they talk to us we are backed by somebody else. And I don't know why, but it is very difficult to obtain a mandate. " (Interview French NAHEMA Official 2) Of course, we see that as well. We also acknowledge that. We also see that only a small share of our money goes to Fokker. But what we really have to watch out for is that all the money we need for the in-service support goes to those other industries. Because there are the really large raises. In the meantime, we also have proof that. (Interview Dutch NH 90 Programme Official 1)
Interpretation	"You can see that some countries still employ industrial politics and some, because they don't have industry or deal with it differently, less. … And the problem with it is that when you look from a distance you see one NH 90, but when you look closer you have a Dutch NH 90, a German NH 90, and Italian NH 90…. And they are as different as possible." (Interview Dutch Director Acquisition)

	"What we try to do is to anticipate the reaction of the others. … Try really to be in their position and say, 'Hey, in their position what would they say about that? How do they react? What would block that? What's the way out or to deblock them?" (Interview French NAHEMA Official 3) "I understand that this is an Italian peculiarity. So for the time being there is nothing that we could do really, because in our command line there is this kind of approach and so it is a question of mental habit with the war organisation. And it is not easy to say. "Ok, we could just change this for the NH 90 programme." It is very difficult. (Interview Italian NH 90 official 1)
Action	"Sometimes you most have some 'robust diplomacy'. Robust in the sense of telling. 'Okay, if you don't come to a common conclusion right now, you're out of that issue. NAHEMA will never take care of this. You can take care of it alone." (Interview German NAHEMA Official 1). "What I used to do, also in my working group is having the German say yes or no, and the French yes or no and in this way you try to get them together (Interview Dutch NH 90 Official 3)" "We are not happy with it, but through such a market negotiation strategy we try to make something out of it. But when one of those larger countries says, 'Yes, we understand. You are right, but I have here 1000 people working, and you know things are not going well at EADS, the Airbus, the A380.'" (Interview Dutch NH 90 Official 1)

For example, an idea of a nation will be sent to the other partners and NAHEMO. These will take note and interpret this idea. Hence, what actually happens is that several people will engage in noticing, interpretation and action processes within the respective programme offices of the receiving nations. These sense-making processes will ultimately be assessed within the constraints provided by the institutional logics of the receiving nations but also within the material constraints that result from the formalisation of the NH 90 programme in the NATO Helicopter Management Organisation and the organisational set up of the programme offices including the division of responsibilities and the allocation of budgets. Nevertheless, as our analysis of the institutional logics chapter 6 revealed, the division of responsibilities is to some extent also largely constrained by the institutional logics of the nations. In the case of Italy this is particularly problematic given that representatives of its

programme offices often lack the authority to take decisions during meetings. They can take note of what is said, but will need to elicit approval from the final users within the Italian army before they are allowed to make a decision. In the other countries, the programme managers have an 'integral programme responsibility'. Which means that provided certain constraints (budget, time, and requirements), they have the authority to take decisions on behalf of their respective defence ministries.

As we have noted in chapter 6, in the Netherlands there is also relatively strong programme oversight by the parliament. Which means that choices pertaining to changes in or additional requirements and/or the allocation of additional resources are subject to parliamentary approval. In the other, countries the degree of parliamentary oversight seems less intrusive. The point is that cycles of noticing, interpretation and action often involve actors from the different defence departments beyond the immediate programme offices. In paragraph 7.3 we will see how one respondent describes this process as a 'whirlpool' In many instances these sense-making processes account for the earlier mentioned '*costs*' of alignment'.

Thus far, we have mainly focused on the cognitive aspects of sense-making. For a better better understandin of sense-making processes in international cooperation we need also to be sensitive towards the communicative aspects of sense-making. To this end we carried out an analysis based on the work done by Vlaar, Van Fenema and Tiwari (2008) and Vaara and Monin (2010). In these studies, sense-making processes are conceptualised as communicative acts involving sense-giving, sense-demanding and sense-breaking (Vlaar, Van Fenema, and Tiwari (2008) and sense-hiding (Kroon, 201; Vaara and Monin, 2010). The sense-making processes described by Jeorg and Brower (2008) focus primarily on how individual actors come to be aware of certain discrepancies between their expectations of events, consciously as well as unconsciously, and what is actually happening. In the case of sense-giving, sense-demanding, sense-breaking and sense-hiding, the emphasis is on the communicative aspects of sense-making. Hence, it is primarily associated with the action component as elaborated by Jeorg and Brower (2008). Needless to say, noticing and interpretation precede these communicative acts (or lack thereof).

Our findings underscore the importance of sense-giving, sense-demanding, sense-breaking and sense-hiding for sense-making processes. Sense-giving and sense-demanding

tend to be positively linked to the quality of sense-making processes. Sense-hiding, on the other hand, tends to be more negatively associated with the quality of overall sense-making. Further analysis also revealed that sense-hiding seems to take place in the almost secretive talks and negotiations between government and its industrial partner as the two quotes in table 7.2 from the French and Dutch NAHEMA officials indicate. Indeed, this points to the more political dynamics when interorganisational sense making is involved.

Nevertheless, this would only be part of the story. Basically, the term sense-hiding seems to indicate a more or less conscious effort by one the partners to prevent the development of a complete understanding of events and actions by the other partners. But although this occurs, sense-hiding may also stem from the intimate relationships that are nurtured by some of the nations with their industrial partner in the programme. In chapter 6, we noted that this was particularly the case in France and Italy. Within these national discussions, agreements may be reached by a nation and its industry that unwittingly affect the whole programme, while the nation in question may not be fully aware that its national agreements have implications for the rest of the programme. Thus, sense-hiding may also be the result of ignorance on the part of one the nations in the programme.

During our coding process we also became aware of a particular type of sense-making process that had connotations with sense-giving, sense-demanding and sense-hiding, but which could not easily be placed in one of these categories. Here, information and advice on certain topics was being discussed between two partners and sense-making had a strong political component. The basic theme that seemed to underlie these instances we have called sense-colluding. This occurs when two or three partners exchanged information on their respective positions without informing the others. The idea of sense-colluding underscores the importance of lobbying in these kinds of programmes, which will be discussed in the next paragraph where we will focus more on the structural mechanisms that facilitate these sense-making activities of participants.

Table 7.2 Sense making as a process of sense-giving, sense–demanding and sense-breaking

Sense-making	Exemplary quotes
Sense-giving	"That is important. You know of each other today and not tomorrow that something is up and don't say: 'We cannot sign next week.' 'Why didn't you say so?' You inform each other of your national process." (Interview Former Dutch National Armaments Director) "You really have to engage in the discussion, and then try to direct the discussion in the way you think is the right one. They do that as well. In this way you try to influence each other and gain support." (Interview Dutch NAHEMA official 2)
Sense-demanding	"Yes, sure: 'Come on, Italy, if you have some problems, discovered by Agusta, but if you have to discuss again and come up again to NAHEMA, that we can check if this is aligned with the other nations.' So this is very sensitive again … 'No, no way, come on. Discuss this in the dedicated workings groups we have set up, and if you don't want to do this, then make your own business case, but not with NAHEMA.' " (Interview German NAHEMA Official 1) "Talk. 'Do you mean that? So you mean this? Then you basically mean the same thing, right? In that case , we agree with each other? Do I summarize it well?' (Interview Dutch NAHEMA official 2)
Sense-breaking	"If you can't work it out, you go to your division leader. Then you try to come up with a strategy. 'What approach should we use? What other issues are on the table? What can I use? … What pressure tools can I employ? To are sensitive issues for them? (Interview Dutch NAHEMA official 2) "The other possibility of course is to convince other nations. Say look, although this often a very hard point. And it takes a lot of time, to really convince other nations because also they have their operational requirement and they have their background and decision making process." (Interview German NH 90 Official 1)
Sense-hiding	"The DGA, those people go from left to right and from right to left. The French National Armaments Director, the director of the DGA was the director of Thales at the time of the signing of the contract for the radar. And now that radar doesn't work and he has protected Thales for a long time" (Interview Dutch NH 90 official 1) "When we are negotiating we suddenly hear that Italy has made a deal with Agusta. We didn't know about that. That's nice for Italy, but it hurts France, so we cannot go along with it like that". (Interview Dutch NAHEMA Official 1)
Sense-colluding	"I knew my colleagues that well. So, I would call them. We see each other tomorrow and I hope you will support on that issue. That is a good thing. Or he calls you and to tell of his problem. That would be communicated upfront. If you don't do that the relations in the meeting will not be good. But of course

	with Germany, that is historically, the relationship with Germany is that good that you inform each other very well upfront with respect to each others position." (Interview Former Dutch National Armaments Director) "When a shared feeling has evolved, it is likely to continue to exist. But that shared feeling can also change now and then. … So that means that on some issues we will be closer to the Italians and on others more to the French." (Interview Dutch NH 90 programme official 1).

7.3 Mechanisms of Alignment

Earlier, we have introduced the notion of 'costs' of alignment, its consequences and its observable outcomes in terms of lack of standardisation, programme delays and issues concerning the division of work share. We subsequently discussed the sense-making processes that underlie alignment. Next we will turn towards the mechanisms that facilitate alignment. Given that logics carry the more deeply held beliefs, interests, values, and norms of a collective, and may be codified in formal rules (e.g. in laws) and are reflected in established practices of those affected by them, we certainly do not expect that alignment is an easy and orderly process. At the same time, some form of alignment of the logics has to occur at the programme level if cooperation is to ensue. We have introduced the notion of 'costs' of alignment to capture this form. While full alignment of logics has not been accomplished, a compromise of the different logics that renders cooperation at least temporarily viable has emerged.

This alignment appears to depend on a mixture of formal and informal mechanisms. Our model of alignment of logics proposed in chapter 2 conveys the notion that sense-making occurred primarily at the interface of the procurement agencies (the organisational level) and NAHEMA (the NATO Helicopter Management Agency). We expected that this interface would be the primary level at which the activities of noticing, interpretation and action of the various nations would take place. Although our findings indeed indicate this to be an important level for these processes, it captures only a portion of the noticing, interpretation and action processes of the various actors in the NH 90 programme.

Our data analysis revealed four main interdependent mechanisms that facilitate the alignment and sense-making activities of the NH 90 nations:

- Memoranda of Understanding in which the formal rules underlying the cooperation have been established;
- formation of coalitions;
- role of NAHEMA; and
- escalation process.

This latter process corresponds the closest to our original expectations of how actors align their logics. We will detail these mechanisms further below. Although we present these mechanisms here as though they constitute independent processes, they in reality often occur simultaneously.

Underlying each of these mechanisms a sense-making process consisting of noticing, interpretation and action occurs. Yet, these sense-making mechanisms are geared towards the attainment of different outcomes.

The General Memorandum of Understanding – Specifying the Formal Rules of the Game (1991)

The General Memorandum of Understanding (MoU) between the nations specifies a large number of substantive and procedural rules underlying the cooperation between the NH 90 nations. Vlaar, Van den Bosch and Volberda (2006) have noted the importance of formalisation such as contracts, decision making structures and the development of procedural rules enabling participants in interorganisational relations to make sense of what is going on.

The MoU specifies the functions and roles of the different programme bodies and their decision making structures and processes. Yet, given the complexity and uncertainty of the NH 90 programme, it is difficult to a priori specify all the possible contingencies that may arise during the lifetime of the programme. Thus, many issues have to be resolved over the course of a programme. There are several levels of meetings between the programme members. At the lower level there are several technical working groups, responsible for certain aspects of the helicopter (e.g. structures, armaments, logistics, etc.). Above these we find the Joint Executive Committee (JEC) consisting of the national programme managers.

The JEC is responsible for ensuring the adequate and timely execution of the programme. The Steering Committee (SC) represents the highest official meeting level in the NH 90 programme. The SC has the overall responsibility for the execution and supervision of the programme. Programme related decisions have to be based on unanimity. The delegates of the participating nations each have one vote.

The way the programme has been set up affects how some form of alignment is achieved. The decision making rules force the partners to reach an agreement. Programme exit becomes progressively less attractive during the course of the programme, because the economic loss to be incurred in the case of exit increases. Production would have to be transferred to the other nations and additional costs associated with the withdrawal of a participant would need to be incurred by that participant. Besides these financial losses, participants are likely to experience reputational damage by leaving a programme. Given these constraints, moving ahead becomes the only perceived viable option. In effect, this creates an interaction environment for participants, which is akin to the description of a process of escalating commitment (Staw, 1981). Some respondents indicated that occasionally this serves as an important motivator for defence departments to seek international cooperation since governments will be less inclined to abandon an international programme (compared to a national programme) for these reasons.

But how are participants able to move ahead given their different logics? Earlier, we have discussed the importance of sense-making processes for alignment. Alignment in our terms does not mean that the logics have to be identical. That would almost be impossible in multiparty negotiation settings. Yet, sense-making in these contexts serves to ensure an adequate understanding of the logics and interests of the partners. This is illustrated by a quote from a German NH 90 official,

> *"You need to establish a certain degree of understanding of the interests of each nation. Thatis the basis of collaboration. And the more you talk to each other, the easier it is. That does not change your priorities and your interests, but you can easier find ways to combine different interests in a common solution."* (Interview German Director Air)

Developing an adequate understanding of the interests of the different parties is important for collaboration. Talking facilitates the development of this understanding. The emergence of a reciprocated understanding does not immediately, nor necessarily change the logics of participants but can make the attainment of a common solution on a specific topic feasible. This process generally happens outside official meetings during coffee breaks or at dinners. As one Dutch NAHEMA official explained:

> "*Lobbying, during coffee breaks talking to people, what is really your problem? My experience is that once you know the problem - what's behind it, what they don't openly tell you at the negotiation table of course – you can often build in an arrangement that diminishes or solves your problem."* (Interview Dutch NAHEMA Official 1)

Yet, the process through which such an understanding evolves is likely to be a circular and non-linear one. It is not simply a matter of proposing a number of alternatives and then let the nations decide which one to pursue. They have to be psychologically and socially involved in the negotiation process. A number of respondents noted that they found it remarkable that, setting certain resource requirements such as money and time aside, no matter how though the negotiations were, they almost always managed to succeed in finding the larger common ground on an issue. A French NAHEMA official described such a process as follows,

> *"We're precising it, and they're also precising their requests. So we're getting closer to each other. This is why I say, it's a whirlpool. Because everybody is getting to the point at the end, some can go directly and say, 'I have no money and I will not do that.' Okay. Then it breaks. You know it's a side of it. But for the others who try to say what they want, you can precise the way to work together. Because if we did it another way, which could be for example by writing a document with all the options and then have the nations choose, nothing would happen. Because it's too rigid. So they want to be part in writing the story, they want to be involved."* (French NAHEMA Official 3)

While this process is a lengthy and tedious one, it serves an important social function. It commits participants to the process of achieving alignment, and triggers a more cooperative mode of interaction in which partners are more likely to compromise on issues. It involves them in '*writing the story*'.

In this sense, the Memoranda of Understanding can be considered to be both the outcome of an interorganisational sense-making process as well as a driver for subsequent interorganisational sense-making processes. In the former sense it is the result of the noticing and interpretation efforts of the representatives of the nations. This is clearly illustrated in the quote from the German official presented above underscoring the importance of frequent talking to achieve a common interpretation of the partners' interests.

In the latter sense, it informs the subsequent noticing, interpretation and action processes of the representatives of the nations. It does this in two main ways. First, it designates the relevant actors that should be involved in the sense-making process and the structures in which this process should take place. Indeed, the quote of the Dutch NAHEMA representative above shows the importance of the organisational structures put in place as platforms for noticing, interpretation and action processes. Second, it serves as a reference point when actors notice differences in their interpretation of certain requirements.

Coalition Formation

In as far as the process described above failed, alignment may take on the form of coalition building. As such a coalition can be seen as the final action of sense-making process in which the different actors have formed a basic understanding of their differing interests in a particular issue and have acted upon the distribution of these interests through allying with actors close to them. We have noted earlier that the decision making within the NH 90 programme is based on unanimous voting. Yet, given the different logics and interests of the participants in practice that often proves difficult. Often participants noted that in practice reaching decisions involves the building of a coalition on a particular issue.

> *"If you have stronger disagreements in a working group on a certain subject then you try to build up coalitions, and then you will automatically find those nations, that are*

close to you, to get them on your side." (Interview German NH 90 official 1)

When the process of alignment takes on the nature of coalition formation, 'coercion' in the sense of group pressure comes into play.

> *"If you get a pool of 2 or 3 [nations, author] to promote an idea, then usually the rest follows them. At least that's how it should work."* (Interview French NH 90 official)

Although in such a circumstance a nation could still hold on to its own viewpoint given that decisions should be taken unanimously - and this indeed occurs occasionally – the partners tend to choose to advance this viewpoint only when they have very vested interests in an issue. There is widespread recognition that this invariably will culminate in delays in the programme. Respondents indicate that it takes little effort to hamper the continuation of a large programme with heavy structures on both the nations and the industrial side. The key mind-set is to move the programme further. This mind-set was particularly evident in NAHEMA, which we will discuss next.

NAHEMA as an Integrative Mechanism

One important facilitator of alignment is the role of NAHEMA. NAHEMA officials originate from the respective procurement agencies of the participating nations. Yet, they are paid a NATO salary. More important though, they all recognized that they are participants of an international organisation. As a French NAHEMA official explained to us,

> *"In an organisation like this one an important point for me is that we have to be internationally minded. We're not a programme manager, we're not a deputy of the national programme manager… I'm not here to support the French position. The French programme manager was sometimes disappointed, because he was not getting the expected support from my side, and I explained him at a meeting, that I understand his position, but from a NAHEMA point of view, I cannot fully support him… At an agency like this one, we work really with an international mind. So we don't fight inside the agency to support the national position. We will really lose a lot*

of time, if we're negotiating inside the agency at some point." (Interview French NAHEMA Official 1)

The respondent notes that for NAHEMA to be effective it is important that NAHEMA officials realise they are members of an international organisation. Although they originate from the respective procurement agencies of the participating nations, they are there to move the programme further. NAHEMA officials are not there to serve the interests of their country's government. Similarly, another French NAHEMA official suggested,

"Because before, I was the procurement officer for France and then I became a NAHEMA contract manager, so I really have the, you know, background, and the way I behaved that moment, I had to completely change my mind and become another person here. Because there I was authoritarian and say, 'I want that, and NAHEMA you're not doing the right thing.'" (Interview French NAHEMA Official 3)

This NAHEMA official notes how he completely had to change his mind-set and behaviour when he became a contract manager at NAHEMA. Before he was a procurement officer for France. In that position he could be more directive, and make strong demands. Yet, in his current position in NAHEMA, this type of behaviour is inappropriate if not unacceptable. In many respects, people working for NAHEMA had to change their identities and behavioural patterns. To some extent NAHEMA has developed a logic of its own, one that is oriented towards the moving ahead of the programme, functioning as a mediator between not only the nations and industry, but also between the different nations themselves. They consider it to be one of their primary tasks to ensure that the nations stay together. This is clearly illustrated by the following quote from a NAHEMA official,

"The role of NAHEMA is to try to understand each nation's need and to look for a common way that is suitable for all of them." (Interview French NAHEMA Official 2)

NAHEMA representatives seek to understand the wishes of the different nations and try to ensure that the nations achieve the largest commonality in the helicopters. They consider the relationship between the governments and their suppliers as one of the main

problems in keeping the nations together. Hence, NAHEMA representatives thus serve a crucial role in the interoganisational noticing, interpretation and action processes. Its primary purpose is to harmonise the different positions of the nations and find a common solution. As such, much of the work conducted by NAHEMA representatives is directed towards the noticing and interpretation of the interests of the nations and to either reconcile or combine them.

The (Vertical) Escalation Process

Another mechanism that is used when problems and conflicts of interests emerge at a particular level involves escalation. Escalation occurs when participants of a particular working group perceive they have exhausted all available means at their disposal to solve a particular issue and initial coalition building also proved difficult. At that time one or more of these participants will involve his superior indicating that an issue cannot be resolved at his or her level.

> *"You can use the JEC meeting, The Steering Committee meeting. To discuss such things and to bring something to the NAD level* [National Armaments Director]*. It must be a severe thing, I think. And under normal conditions you have to discuss such things at the Steering Committee level before you bring it to the NAD level. This would be the normal way*." (Interview German NH 90 Programme Official 2)

Although the escalation of an issue frequently occurred, respondents indicated this to be a measure of last resort. As a Dutch NAHEMA official explained,

> *"If the working level … can't work it out, it escalates to a higher level. They will not work it out either, because then you are at a level at which the people involved don't know exactly what it is about, content wise. And then they are afraid to take a decision, because they are afraid to offend or insult - I am not exactly sure – the others. And finally the highest level says, 'The working level has to solve it.' And then you explain, 'We have already tried that, we could not work it out.' 'The working level has to find a solution! That's it.' 'Okay, then we will work it out.' That means that my*

mandate has been expanded. And that mandate isn't defined. It doesn't work that explicitly." (Interview Dutch NAHEMA Official 2).

The escalation process in effect triggers a more intra-organisational sense-making process. It can be seen as the action component when the interorganisational noticing and interpretation activities have led to a situation in which the respective actors have gained a common understanding that harmonising their positions within current constraints is infeasible. An issue is brought to the attention of superiors, who then often engage in a sense-making process with their respective counterparts. Yet, the problem with escalation is that an issue becomes pulled out of the technical area and acquires a political meaning. The people who then have to decide often lack the technical knowledge behind an issue to reach a technical solution. They do possess the ability to allocate more resources in order to overcome an issue, but this often has to be solved at the technical level. In essence it means that the mandate of the members at the technical level became implicitly expanded. Moreover, escalation often leads to significant delays. When a conflict of interest is escalated to the Steering Committee, for example, it could easily take a half year until it returns to working group level in which it originated, if only because the Steering Committee convenes only two times a year.

The more severe problems may even escalate to the level of the National Armaments Directors (NAD). The National Armaments Directors are generally not involved in the programme. Yet, when there are issues that cannot be solved at the Steering Committee level, the NADs will be involved through the internal escalation process within the procurement agencies. They also keep themselves informed through their contacts with their counterparts in the other nations.

"But the NADs they see each other so frequently… At times I saw these people more often than my own staff in the Netherlands. Because you would always run into them. Also at those Weapons Conferences. There were five or six of those conferences each year which I attended. And there rooms were reserved for meetings." (Interview Former Dutch National Armaments Director)

Escalating a problem tends to activate the normative dimension of cooperation. The formal rules as codified in the MoU cannot possibly cover all contingencies emerging during the course of cooperation. The formal rules need to be accompanied by shared norms of appropriate conduct. We have seen how this normative dimension is instilled in the identities of NAHEMA personnel. At the political level these norms become even more important. The development and perpetuation of a climate of trust seemed essential to ensure the continuation of cooperation.

> *"The essence of cooperation is that you prevent to put each other for great surprises. It depends on the trust that you have in one another. That is important."* (Interview Former Dutch National Armaments Director)

At the political level much emphasis is placed on maintaining workable relationships with the other partners. These norms have been established as a consequence of the repeated interaction and cooperation among nations on a number of programmes and international forums. The NH 90 programme certainly is not the only issue common to the agenda's of the governments involved. The NH 90 nations cooperate on numerous issues and within a multitude of international forums such as the EU, NATO, OCCAR, and more recently the European Defence Agency (EDA). The NH 90 programme, as we have seen, is also not the only development and production programme in which these nations cooperate (see chapter 4 for some examples).

> "*We are all partners in the European Union. And we have learned a lot to tolerate each other. To harmonise things together and I think none of the nations will take the risk for disharmony in such a subordinate project at the political level. So, when it really comes to a situation that one of the partners in the project will damage the other ones, I think that the political level, will very soon find a way to be in harmony again. For that reason, from a project perspective maybe you have to find some things you don't like. But that is not the relevant level from my perspective. The relevant level is much higher. It is the political level. And from a political perspective all of the projects will be very fine."* (Interview German NH 90 official 2)

While at the programme level there may be certain conflicts of interests between the actors the escalation mechanism ensures that encountered problems and conflicts that persist eventually involve the political level. Actors at the political level have the possibility to make connections to other programmes and cooperative endeavours in which nations are involved. Although the NH 90 programme in terms of the amount of money involved constitutes a relatively large project it doesn't have the magnitude to escalate into a conflict between the nations.

7.4 Concluding Comments

In this chapter we showed that alignment in the NH 90 programme comes at a price. Manifestations of these 'costs' of alignment included lack of standardisation, programme delays, and challenges involving the division of work share. In paragraph 7.2 we have discussed the sense-making processes underlying the alignment of logics. We initially focused our attention towards both the more cognitive and communicative aspects of sense-making. In paragraph 7.3 we distinguished a number of formal and informal mechanisms underlying the sense-making processes of the various national stakeholders in the NH 90 programme. Here we would like to take stock and discuss the relation between these mechanisms, the sense-making efforts of the various national stakeholders and the 'costs' of alignment.

The sense-making efforts of the programme participants as we have seen don't take place in a vacuum. The structure of the programme provides for a basic sense-making platform for the various actors of the NH 90 programme. The memoranda of understanding provide for the basic rules that apply, such as the responsibilities of a dedicated international programme office (NAHEMA in this case), who has the authority to take decisions on particular subject matters, the minimum frequency of meetings to be held and where they should take place. Accompanying these formal rules are a number of informal rules. NAHEMA personnel serve as a main vehicle to keep the nations together. NAHEMA personnel frequently reported the difficult position they found themselves in. Coming from the different defence departments of the participating nations and now working for an international programme office they noted that it is often difficult to remain objectively.

Often they find themselves under pressure from their ministry of defence. Nevertheless, they also expressed their awareness that fighting for national interests inside the agency would seriously limit NAHEMA's effectiveness. They share a general feeling that it is their primary responsibility to keep the nations together.

Lobbying provides for another informal mechanism. This mechanism has the clearest connotation with our sense-making activity described as sense-colluding. The memoranda of understanding outlines a decision making structure which is based on the principle of unanimous voting. In practice, this decision making rule results in efforts of sense-colluding since the national stakeholders are aware that no one ultimately has an interest in blocking a particular subject indefinitely as this would mean that the programme can't move forward. As such an informal process of lobbying has replaced which basically stipulates that when a coalition of two or three nations has formed, the others will follow or that they will pay additionally for the fulfilment of their wishes. This latter instance is most visible in the lack of standardisation of the helicopters. We will now turn to a final discussion of the process of aligning national institutional logics in the NH 90 programme.

CHAPTER 8 DISCUSSION AND CONCLUSIONS

8.1 Answering the Research Questions

In this thesis we set out to provide an answer to two research questions. In the first research question we asked what the logics of the actors (i.e. national governments and industrial companies were in the NH 90 programme. In Chapter 5, we presented the analysis of the data and suggested two main dimensions on which these logics varied. The first one, the defence industrial orientation, consisted of the export orientation, the degree to which a nation was concerned with European cooperation in defence procurement and the nature of the relations between the government and its main defence suppliers. The second dimension related to the management of the programme by the governmental actors. This dimension consisted of the degree of parliamentary oversight of development and production programmes and the manner in which programme responsibilities were delegated to the programme offices of the nations studied. We have also noticed that in some countries the logics have been changing. This is probably most noticeable in the privatisation processes that some companies have been experiencing in late 1990s in France and Italy. Yet, in both countries the governments retain some governmental control in share-holding form in Finmeccanica (Italy) and Eurocopter (France through EADS).

8.1.1 Forms of Alignment

The second research question dealt with the question of how the process of aligning the logics of action unfolded. Underlying this question is the assumption that at least some degree of consistency in the logics of the partners needs to emerge (e.g. Bacharach, Bamberger and Sonnenstuhl, 1996). In Chapter 6, we introduced the notion of "*alignment that comes at a cost*" to account for some of our empirical observations. It suggests that the alignment of logics is a difficult and lengthy process. The alignment that we observed here had some serious consequences for the performance of the programme, most visible in the

lack of standardisation achieved in the helicopters, the delays that occurred in the programme, and (dis)agreements concerning the division of work share among the nations.

A sceptical perhaps even a cynical perspective might suggest that due to these "costs" alignment actually has not occurred. Another interpretation is that over the course of the NH 90 programme some form of '*quasi-alignment*' has emerged. In this connection, the word 'quasi' can have two different meanings. Quasi can refer to something that looks like alignment, but is actually not alignment. A second meaning of quasi-alignment implies that certain elements of the logics over the course of the programme have been aligned to such an extent that it can proceed relatively successfully, but it also implies that some have not been aligned. Here, the word 'quasi' can be interpreted as 'semi', as Brown and Eisenhardt's (1997: 28) study: *"By semistructures we mean organizations in which some features are prescribed or determined (e.g. responsibilities, project priorities, time intervals between projects), but other aspects are not. Semistructures, exhibit partial order, and they lie between the extremes of very rigid and highly chaotic organization."*

The first form of quasi-alignment may result out of the ignorance of actors that their logics diverge. Especially, during the early stages of cooperation with unfamiliar partners actors may not be aware that they are operating on the basis of different values, beliefs and interests. The first form of quasi-alignment could also result out of intentional conduct of programme actors. Actors could verbally conform to a certain logic, while pursuing other interests. In this regard the ideas of (Brunsson, 1993) come to mind. He distinguishes two control mechanisms to deal with the inconsistency between ideas and actions, one being 'justification' and the other one being 'hypocrisy'. Obviously, this is generally difficult to ascertain. The 'intended' orders placed by nations may serve as a simple illustration here. The intended orders provide the basis on which work share agreements are based. A nation interested to obtain a certain amount of work share could claim to procure an amount of helicopters and at a later stage decide to procure fewer helicopters.

Some earlier European development and production programmes seem to resemble the first form of quasi-alignment. Lorell (1980) argued that the French-German Transall C-160 programme constituted "*the first genuine codevelopment aircraft programme*." He offered a number of explanations for the substandard performance of the Transall programme:

- serious disagreements over the requirements and specifications of both France and Germany;
- heavy politicised programme environment;
- lack of a unified government and industrial management structure; and
- ignorance of both partners to the costs benefits of cooperation.

Some of these issues emerged in our case too. In the NH 90 case, the nations experienced difficulties harmonizing their requirements and specifications. Nevertheless, unlike France and Germany in the Transall C-160 programme, they managed to produce a product that fitted the requirements of the participating nations quite reasonably. In the Transall C-160 programme, the requirements of the two nations appeared so different that combining them would almost necessarily have resulted in the creation of the proverbial 'sheep with five legs" (Lorell, 1980).

In the NH 90 case, the environment was less politicised than the earlier Transall C-160. The Transall programme took place in a period in which both the United States and France competed for political influence in West Germany. As Lorell (1980) noted, the German decision to go-ahead with the programme despite reservations towards the fulfilment of the requirements for the Luftwaffe had much to do with a perceived obligation of the German government to restore the balance in the Franco-German axis that followed the 1963 Elysee Treaty between French President de Gaulle and German Chancellor Adenauer. In France, concerns had arisen with German commitment to their political cooperation. Lorell 1980, for example concluded:

> *"At times regional political considerations appear to have heavily influenced the origin and the evolution of most European codevelopment programs. Nearly all aircraft codevelopment program starts occurred during the presidency of Charles the Gaulle. All of the large aircraft programs were initiated by the French, used French designs, or were dominated by the French. To a large extent the programs served as a tool of Gaullist foreign policy. This was particularly true of the Franco-German programs."*

Although politics inherently dominates many international collaborative programmes, issues such as the ones noted by Lorell (1980) did not readily emerge in the NH 90 programme. In many respects, the NH 90 programme together with the French-German (and later Spain) Tiger attack helicopter programme paved the way for deeper European defence-industrial cooperation. Without these programmes it would have been unlikely that the helicopter divisions of Aerospatiale and Messcherschmitt-Bölkow-Blohm (MBB) would have been merged to form Eurocopter.

Where foreign, security and industrial policy were often given primacy in the Transall C-160 programme over economic considerations, the latter play an equally important role in the NH 90 programme. At times, some of these issues emerged in the NH 90 programme, as we have seen. Yet, most often these related to certain industrial considerations of nations. The inclusion of two different engines to power the helicopter probably offers the best example thereof. Yet, on the whole the nations have been able to keep the programme costs down. Although cost overruns in these programmes are generally difficult to ascertain, the nations have been able to run the programme within their budgets.

Therefore, we consider an interpretation of the NH 90 programme according to the first form of quasi-alignment as too cynical. For sure, the multinational cooperation in the NH 90 programme has clearly been more successful than the earlier binational Transall C160 programme. What seems to suit our case better is the second form of *quasi-alignment*, by which we mean that certain elements of the logics over the course of the programme have been aligned to such an extent that it can proceed relatively successfully even though other elements have not been aligned. It bears a connotation to the observation of some our respondents that assessing the course and performance of the NH 90 is akin to "seeing a glass half full or half empty". There is a certain degree of indismissible obliquity in achieving this second form of alignment of logics. The British economist John Kay recently celebrated oblique approaches to complex and uncertain decision-making situations. "*Obliquity*", Kay asserts, "*describes the process of achieving complex objectives indirectly… In general, oblique approaches recognise that complex objectives tend to be imprecisely defined and contain many elements that are not necessarily or obviously compatible with each other, and that we learn about the nature of the objectives and the means of achieving them during a process of experiment and discovery*" (Kay, 2010: 3-4).

Zabusky (1995) in her study of the European Space Agency (ESA) describes a similar process of quasi, or perhaps semi-alignment among the communities that represent ESA. "*Both technology and cooperation, albeit in different ways, thus meet the challenges posed in working together by the diversity resulting from the division of labor…. Each, as structure, provides a means of organizing contradictions, connecting diverse pieces, and so crystallizing harmony out of the disunity and ambiguities of conflict. They achieve this without entirely eradicating the sources of conflict, namely, the distinctions among people, things, institutions and values.*" (p. 194). She seems to be indicating that a form of semi-alignment is perhaps all one can wish for in such international collaborative programmes.

8.1.2 Quasi-alignment and the Nature of Sense-Making

How did this second form of quasi-alignment in the NH 90 programme came about? We proposed a model in which the institutional logics of the actors in the programme inform the noticing, interpretation and action of events by organisational actors involved in an interorganisational exchange relationship. We also focused our attention on the interorganisational sense-making dynamics. Here, we focused less on the cognitive aspects of sense-making but more on the communicative aspects. This analysis was grounded in earlier work by Vlaar, Van Fenema and Tiwari (2008) and Vaara and Monin (2010). Synthesizing and extending their ideas led to a model in which sense-making is conceptualised as consisting of the activities of sense-giving, sense-demanding, sense-breaking and sense-hiding. Our analysis indeed revealed the importance of these communicative acts. Vaara (2003), Vaara and Monin (2010) underscored the importance of politics in the interorganisational relations. In their analysis of post-merger integration processes this was particularly visible in the active hiding of potentially relevant information in various factions that emerged during the post-merger phase. In the work by Vlaar, Van Fenema and Tiwari (2008) these political dynamics seemed to play a less important role. Indeed, an explanation can be found that their research focused on geographically distributed work teams within in one organisation. As such, politics are likely to play a less prominent role (although they are likely to be not completely absent. Political dynamics played an important role in our research context though. Indeed, sense-hiding occasionally indicated the existence of power plays among partners. Nevertheless, we also noted that

sense-hiding need not always have a political intention. It may also simply reveal ignorance on the part of one the partners in the programme.

Moreover, we identified another sense-making activity not yet previously discussed. We have called this activity sense-colluding. Sense-colluding described instances where two or a few partners exchanged information between themselves without informing a number of other partners. Basically, it points to the importance of lobbying between the partners in order to mobilise support for their positions.

In paragraph 7.3 we enumerated a number of mechanisms through which actors try to align their logics. The Memorandum of Understanding established the basic rules of the game including the decision-making structure and procedures. These formal decision making structures and procedures in turn inform the two interpersonal alignment mechanisms in which the main sense making activities of the actors takes place. Coalition formation involves a horizontal alignment mechanism. Here actors try to gain a deeper understanding of a partner's logic, interests and motivation and try to find a common position on a particular subject. Vertically actors have the opportunity to escalate a problem to a higher level. Yet, as many of our respondents indicated, this is a mechanism of last resort. The escalation mechanism is used only when individuals at a particular organisational level at some point notice they are not going to agree on a common understanding and way ahead because their logics and interests diverge too much.

8.2 Contributions to Theory

A debate in the social sciences has been the degree to which individuals and organisations are

constrained by the social and cultural environments in which they operate. Neo-institutional theory, which provided the theoretical background for this study, has tended to be criticised for an overly socialised conception of human behaviour. The sense-making perspective as developed by Karl Weick has tended to be criticised for the opposite. That is, it tends to neglect the social and cultural aspects that inform the sense-making activities of individuals. A number of scholars (Weber and Glynn, 2006; Weick, 1995) have provided theoretical arguments for a reconciliation of these different perspectives. We have empirically – within

the constraints of our study – demonstrated that there is room for such a reconciliation between these divergent perspectives. The concept of quasi-alignment of logics as introduced in this thesis captures both the agentic propensities of individuals and organisations and the constraining effects of institutional logics on the behaviour of individuals and organisations.

Part of the criticism with respect to the overly socialised conception of human behaviour in neo-institutional theory stems from its focus on the cultural-cognitive dimension of institutions, the values and beliefs that inform the behaviour of actors (Powell and DiMaggio; 1991). Nevertheless, the regulative and normative aspects of institutions play a very powerful role in interorganisational relations as discussed here. The institutional logic of a nation is reflected in its laws, rules and policies, which in turn limit actors' room to manoeuvre in international programmes. These regulative aspects may even continue to exert pressure when an institutional logic is changing.

At the same time, the success of collaboration is also largely dependent on the development of new rules and norms. In our study, we have seen this in the function of the Memorandum of Understanding between the nations and the role of NAHEMA. Many of these rules and norms serve to mitigate against the pursuit of interests governed by institutional logics. These also operate at multiple levels of analysis. In our case, between the different programme offices and NAHEMA, the National Armaments Directors, and at the political level between the political representatives of the defence departments. At the fringes of institutional orders, interdependencies thus may create the development of certain rules that in a way alter or set aside elements of institutional logics, in the sense that actors may need to compromise on their logics. In this sense we have provided empirical support for recent theorising in neo-institutional theory that suggest that logics may not be as robust and stable as prior research has tended to suggest. Actors do not necessarily conform mindlessly to institutional scripts, but are likely, at least under certain circumstances, to reflect and elaborate upon them as well as occasionally dismiss them. In this study, the mere exposition of actors to other actors with different beliefs and convictions is a likely mechanism that triggers this noticing, interpretation and action. The noticing and interpretation of differences between national actors, individually as well as

organisationally, in effect triggers also a noticing and interpretation of one's own dominant logic.

With respect to the literature on sense-making we have made a number of contributions. First, we have provided empirical support that sense-making is affected by wider social context and that institutional logics inform the sense-making process. Hence, inasmuch as Weick (1995: 36) suggests that "*sense-making is the feedstock of institutionalization*", the opposite seems equally plausible. Institutional logics and institutions in general inform the sense-making process (Weber and Glynn, 2006). We have suggested that the exposition of actors to different institutional logics is likely to trigger a cognitively oriented sense-making process consisting of noticing, interpretation and action. We have also noted that this latter action component consists of communicative acts. Based on earlier work we have suggested that these acts consisted of acts of sense-giving, sense-demanding, sense-breaking and sense-hiding Gioia and Chittipetti, 1992; Vaara and Monin, 2003; Vlaar, Van Fenema and Tiwari, 2008). We have also suggested another communicative act, sense-colluding that is likely to occur in multi-party negotiations. At the same time we have tried to expand recent theorising on sense-making in interoganisational relationships by providing empirical evidence of the significance of formalisation in interorganisational relationships as a means to make sense (Ring and Ven de Ven, 1994; Vlaar, Van den Bosch and Volberda, 2006). Moreover, we have identified a number of mechanisms, the Memoranda of Understanding, the role of NAHEMA, lobbying and escalation processes that enhance sense-making processes.

We have tried to expand past theorising on the alignment of logics. Specifically, we have suggested that in international programmes such as the ones discussed in this thesis full alignment of logics is possibly a utopia. Instead, we have introduced two alternative forms of what we have called '*quasi-alignment*' to account for our findings in this study. The first form of quasi-alignment describes a form of alignment, in which logics appear to be aligned, but are actually not aligned. The second form of alignment distinguished, is one in which certain elements of logics are aligned while others are not. With respect to cross-cultural dynamics in interorganisational relations researchers have examined that not all of Hofstede's cultural dimensions are likely to equally affect cooperation (Barkema and Vermeulen, 1997). In a similar vein, we propose here that not all of the dimensions of the

logics of the partners equally affect the extent of alignment that can be achieved. The manner in which programme responsibilities are divided within the ministry of defence (an element of programme control) in our study hampers the speed of decision making within the programme. Moreover, it also affects the propensity of a nation to collaborate in the sense that it can enable or constrain the active involvement of its representatives in interorganisational sense-making processes.

With respect to the defence industrial policy and its constituting elements the *'costs' of alignment* manifest themselves in the number of variants, programme delays and the division of work share. The elements of this dimension that seem to have the strongest impact are the degree to which a government actively stimulates its defence industry and the closeness of the government and its defence industry. We would like to add here that the logics of the nations appear to be converging, at least among the larger nations in Europe. Programmes such as the development and production of the Tornado and later the Eurofighter Typhoon, the Tigre, and the NH 90 among others have provided ample opportunity for nations to learn from each other, not only on how to manage these programmes but also the institutional logics underlying their management.

But not only at the level of individual programmes can we discern some convergence. Various governments have expressed the need for a greater extent of collaboration between nations in arms development and production. Concretely this has resulted in a number of bilateral and multilateral agreements between European nations such as the Letter of Intent, the Framework Agreement, OCCAR (Joint Organisation for Arms Collaboration), and most recently the European Defence Agency).

Another source of convergence stems from the increase in multinational operations (e.g. in Bosnia, Iraq, and Afghanistan). Soeters (2008) has documented the effects of experiential isomorphism between national military establishments resulting from cooperation among military forces. Indeed, these have forced national military establishments to adapt some form of both administrative and technical isomorphism in order to smoothen communication.

8.3 Limitations and Future Research

During the course of any research project choices have to be made about the questions to be addressed, types of data to be collected, and the manner in which data will be analysed. Our project in this respect is no difference. Yet, the choices that have been made determine to a large extent the limitations of a study. Our decision to conduct an in-depth case study into a European military programme has emphasised accuracy over the generalisability of the findings presented here. In addition, international military industrial cooperation takes place in a highly context-dependent environment with its own institutional and structural characteristics and dynamics. Hence, our findings are likely not one-on-one transferable to other settings.

Our sensitivity to the content of the logics of the nations and organisations included in our study, limits the generalisability of our findings even further. The dimensions that we derived from our documentary and interview data may not be the only relevant dimensions. In other settings, dependent on the actors and institutions involved, different principles and belief systems are likely to be relevant and operative.

We would also like to emphasise the relatively conservative nature of our case study. In our quest to discern differences between the countries covered in our study, we may have overlooked and dismissed many of the striking similarities between the nations collaborating in the NH 90 programme. They are all European countries that in many ways shaped and shared one another's developmental trajectories through many centuries. Currently, these countries are all members of the European Union and have adopted the same monetary currency.

Another limitation of our study is the uneven distribution over the countries in interview respondents and documentary material. Given access, resource and time constraints inherent in any study, our data has largely been collected from Dutch sources. Although we have tried to triangulate our data wherever possibly, this may have somewhat coloured the findings that we have presented here.

Similarly, we would like to stress the on-going nature of the NH 90 programme. At the time of writing, the first NH 90 helicopters have been delivered to the founding nations and new customers. Nonetheless, the development phase has not been completely finished

as some problems still needed to be solved. The production phase has only just begun, and the negotiations with respect to the in-service support phase are continuing.

Our research has been largely of a descriptive and explorative nature. We have examined one specific case, the NH 90 programme in-depth. A first possible avenue for future research would be to examine how our notion of semi-alignment upholds in other cases and or contexts. Similarly, the mechanisms of alignment that we found in this case study might not and probably will not be the only mechanisms. A second avenue of future research could be to explore whether there are more alignment mechanisms than the ones that emerged during this study.

Another issue that seems worthwhile for further analysis concerns the positional nature of actors. Bachararch, Bamberger and McKinney (2000) have suggested that an actor's social position within organisations determine their adoption for more tactically or strategically oriented logics. We believe that this may an important function of the escalation process in which actors at lower levels tend to focus more or less on the means, while higher positioned actors tend do adopt a more strategically oriented logic.

The emphasis that we have placed on the differences in national institutional logics has had the unintentional side effect of not fully exploring another important difference in logics; the public – private dimension. Bryson, Crosby and Stone (2006) argued that the difference in institutional logics between the private and public sector could have important implications for the performance of cross-sector collaborations. In our study, we have seen that nations vary in the degrees and forms of government-company relationships. Future research could study these interactions more carefully to see how logics among companies and governments vary in different national contexts.

8.4 Concluding Comment

We initially started out with two main research questions that were informed by an effort to gain a deeper understanding of the alignment of different national institutional logics of the founding nations of the NH 90 programme. The results of the analysis of the data presented in chapter 5 indeed revealed variation in the national institutional logics of the NH programme partners. We then sought to understand the alignment process better and

discovered a number of mechanisms that facilitated alignment. Moreover, we initially suggested the term of '*alignment that comes at a cost*' to account for some of our observations, such as the lack of standardisation achieved in the helicopters, the delays that occurred in the programme, and (dis)agreements with respect to the division of work share among the nations. In the present chapter, we elaborated upon this notion and suggested some alternative forms of alignment that seemed to fit our observations of the NH 90 programme. Although the NH 90 programme is likely to continue for a years or decades to come, we have now come to the end of our journey throughout the NH 90 programme. Clearly, in reality the journey is not over yet.

APPENDIX DOCUMENT EXAMPLE

Tweede Kamer der Staten-Generaal **2**

Vergaderjaar 1991–1992

19 282 **Nederlandse helicopterbehoeften**

Nr. 11 **BRIEF VAN DE STAATSSECRETARIS VAN DEFENSIE**

Aan de Voorzitter van de Tweede Kamer der Staten-Generaal

's-Gravenhage, 25 augustus 1992

In mijn brief over het Navo-helikopterproject NH-90 van 5 september 1991 (Kamerstuk 19 282, nr. 10) deelde ik U mede dat het internationale «Memorandum of Understanding (MOU)» tussen de deelnemende landen voor de «Design and Development (D&D)» fase, waarin Nederland voor 92 miljoen ECU deelneemt, was ondertekend. Ook heb ik aangegeven dat vervolgens de ondertekening van het ontwikkelingscontract voor het einde van 1991 was te verwachten. Met deze brief informeer ik U over de stand van zaken met betrekking tot dit projekt.

Inmiddels is met enige vertraging het ontwikkelingscontract gereed voor ondertekening. Nederland werkt in dit project samen met Duitsland, Frankrijk en Italië. Op grond van het door deze landen ondertekende algemene MOU en het D&D MOU zal het «Nato helicopter management agency (NAHEMA)», de vertegenwoordiger van de vier deelnemende landen, nu tot ondertekening overgaan van het contract. Het contract wordt gesloten met de internationale industriële organisatie «Nato helicopter industries (NHI)» als vertegenwoordiging van de deelnemende industrieën in de vier landen.

Tijdens de onderhandelingsfase hebben enkele ontwikkelingen geleid tot een verhoging van het voor Nederland geldende contractbedrag in dit project tot f 253,6 miljoen (prijspeil 1991).

De nu geldende Nederlandse bijdrage volgt uit prijsescalatie en een stijging van het Nederlandse aandeel in de ontwikkelingskosten. De stijging van het Nederlandse aandeel wordt veroorzaakt door wijzigingen in de industriële werkverdeling in internationaal verband en de bij Fokker voor dit soort werk van toepassing zijnde tarieven.

In mijn brief van 1 oktober 1990 (Kamerstuk 19 282, nr. 7) staat dat Nederland deelneemt met f 217 miljoen (prijspeil 1990). Dit bedrag berustte op het toen geldende Nederlandse aandeel van 87,9 miljoen

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ECU. In 1991 zijn de industriële mogelijkheden en de beschikbare budgetten van de deelnemende landen en industrieën verder beoordeeld. Daarbij bleek het beter de internationaal overeengekomen werkpakketten per land en per industrie enigszins te herschikken. Dat leidde tot een meer afgerond en hoogwaardig werkpakket voor de Nederlandse industrie alsmede tot enige verhoging van de Nederlandse bijdrage tot 92 miljoen ECU. Hierdoor is gelet op de totale omvang van het project, met naar verwachting minimaal 600 door diverse landen te bestellen helikopters, vanuit industrieel oogpunt een goede uitgangspositie verkregen.

In de tussentijdse rapportage van 5 september 1991 is, zoals in het MOU is vastgelegd, het bedrag vermeld van 92 miljoen ECU. Niet werd vermeld dat het MOU uitgaat van het prijspeil per 1 januari 1988. Op grond van een veronderstelde jaarlijkse prijsescalatie van 3% zou de bijdrage van 92 miljoen ECU (f 213,5 miljoen in prijspeil 1988) op 1 juli 1991 – de formele contractdatum – resulteren in een bijdrage van ongeveer f 237 miljoen (prijspeil 1991).

Bij de onderhandelingen die namens het NAHEMA met Fokker, als hoofdaannemer van de deelnemende Nederlandse industrieën zijn gevoerd, bleken de voor de NH-90 belangrijke tarieven over de jaren 1988 tot 1991 fluctuaties te vertonen. Door herschikking van het werkpakket was een volledige vergelijking met de situatie van 1 januari 1988 niet meer mogelijk. De nu door de Nederlandse industrieën gehanteerde tarieven zijn, behoudens een relatief klein deel dat nog moet worden aanbesteed, door de Defensie Accountantsdienst getoetst en als aanvaardbaar gekwalificeerd. Het Nederlandse Instituut voor Vliegtuigontwikkeling en Ruimtevaart (NIVR) heeft bovendien de urenbegroting van het Nederlandse werkpakket positief beoordeeld. Het bedrag van f 253,6 miljoen (prijspeil 1991) is een vast bedrag waarop alleen prijsescalatie van toepassing is. Met dit bedrag is inmiddels in de defensiebegroting rekening gehouden.

Door het internationale karakter van dit ontwikkelingsproject zijn in het contract bepalingen opgenomen die niet in alle gevallen geheel overeenkomen met nationaal toe te passen procedures. Zo zal het bijvoorbeeld niet mogelijk zijn om voor de Nederlandse financiële bijdrage van ongeveer 7% in de D&D fase, zelfstandig bij de industrie controle uit te oefenen op de stand onderhanden werk om daarmee een koppeling te leggen tussen de betalingen en de werkelijke voortgang. Het contract kent wel een gedeeltelijke vertraging van geplande betalingen wanneer omschreven mijlpalen in de ontwikkelingsfase niet worden gehaald. De controletaken vallen onder de verantwoordelijkheid van het internationale projectbureau NAHEMA dat op haar beurt verantwoording schuldig is aan het «Steering Committee» waarin de landen vertegenwoordigd zijn.

Ik heb de overtuiging dat het overeengekomen contract in dit ook voor Fokker zo belangrijke internationale samenwerkingsproject, een aanvaardbaar resultaat heeft opgeleverd. Ik ben voornemens op korte termijn akkoord te gaan met ondertekening van het contract. De overige deelnemende landen hebben per 1 augustus 192 al ingestemd met de bereikte contractresultaten, zodat na mijn accoord het contract direkt door het NAHEMA kan worden ondertekend.

De Staatssecretaris van Defensie,
B. J. M. baron van Voorst tot Voorst

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